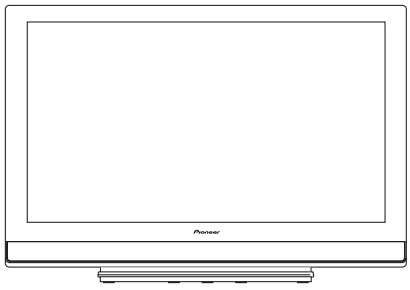
Pioneer sound.vision.soul

Service Manual



PDP-4271HD

ORDER NO.
ARP3356

PLASMA DISPLAY SYSTEM

PDP-4271HD
PDP-4270HD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-4271HD	KUCXC	AC 120 V	
PDP-4270HD	KUCXC	AC 120 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
PDP-4271HD, PDP-4270HD	ARP3357	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM

For details, refer to "Important Check Points for good servicing".

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1. NOTES ON SERVICE VISIT

1.1 SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

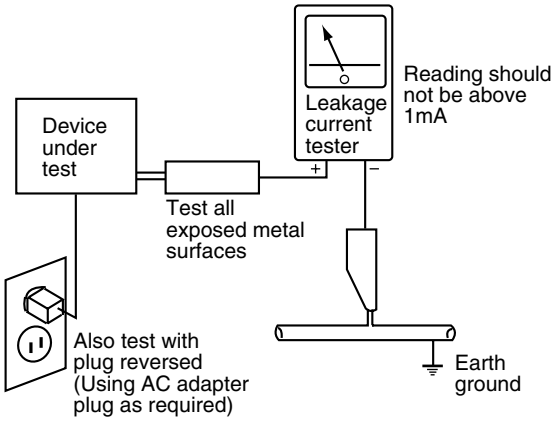
1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
   - Always return the internal wiring to the original styling.
   - Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
   - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
   - Make sure that the panel vent does not break. (Check that the cover is attached.)
   - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
   - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4MΩ. The below 4MΩ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).
Turn the AC power switch on.
Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1mA.


Reading should not be above 1mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.
If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

1. Power Cord
2. AC Inlet
3. Power Switch (S1)
4. Fuse (In the POWER SUPPLY Unit)
5. STB Transformer and Converter Transformer (In the POWER SUPPLY Unit)
6. Other primary side of the POWER SUPPLY Unit

■ High Voltage Generating Point

The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.
The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in "10.3 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM" are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

42 X DRIVE Assy.....(–180 V to 205 V)
42 Y DRIVE Assy.....(500 V)
42 SCAN A Assy.....(500 V)
42 SCAN B Assy.....(500 V)
SUS CLAMP 1 Assy.....(–180 V to 205 V)
SUS CLAMP 2 Assy.....(–180V to 205 V)

: Part is Charged Section.
: Part is the High Voltage Generating Points other than the Charged Section.

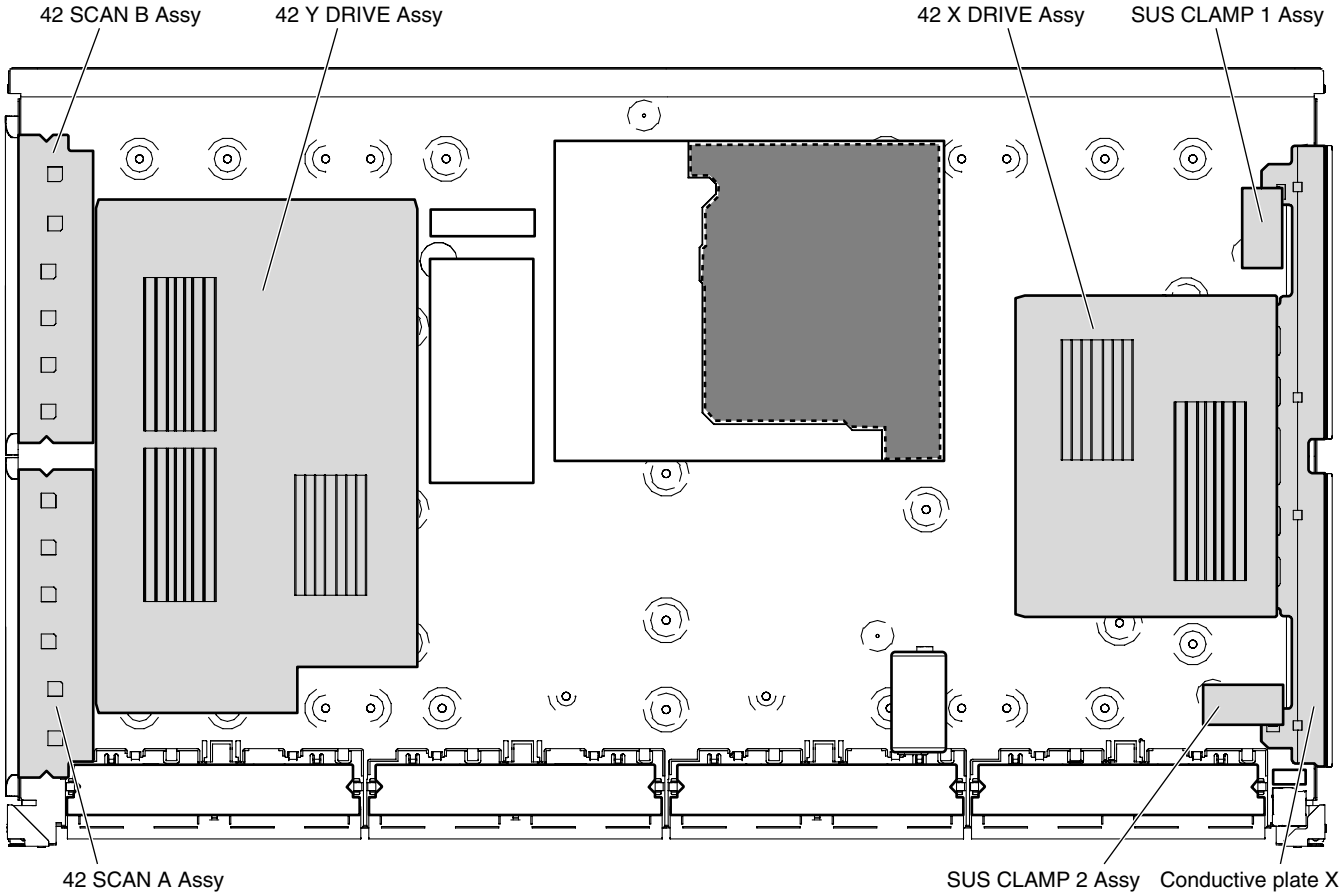


Fig.1 High Voltage Generating Point (Rear view)

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

Quick Reference upon Service Visit ①
Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① **Rear case**
When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "6. DISASSEMBLY"

② **Attaching screws for the HDMI connector**
When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① **How to discharge before replacing the Assys**
A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:
A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.
For details, see "10.3 Power ON/OFF Function for the Large-Signal System."

② **On the settings after replacement of the Assys**
Some boards need settings made after replacement of the Assys. For details, see "7. ADJUSTMENT"

3. On various settings

① **SR+**
After a repair using a PC, be sure to restore the setting for the RS-232C connector to SR+.

② **Setting in Factory mode**
After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD

	Item	No. of LEDs flashing: Red	Blue
Panel section	Communication with the panel drive IC		Blue 1
	Communication with the module IIC		Blue 2
	DIGTAL-RST2		Blue 3
	Panel high temperature		Blue 4
Main section	Audio		Blue 5
	Communication with the Module microcomputer		Blue 6
	Main 3-wire serial communication		Blue 7
	Main IIC communication		Blue 8
	Communication with the Main microcomputer		Blue 9
	FAN		Blue 10
	Unit high temperature		Blue 11
	Communication with the D-TUNER		Blue 12
	MTB-RST2/RST4		Blue 13
	POWER	Red 2	
	SCAN	Red 3	
	SCN-5V	Red 4	
	Y-DRIVE	Red 5	
	Y-DCDC	Red 6	
	Y-SUS	Red 7	
	ADRS	Red 8	
	X-DRIVE	Red 9	
	X-DCDC	Red 10	
	X-SUS	Red 11	
	UNKNOWN	Red 15	

Change of settings

How to enter Factory mode using the supplied remote control unit

In the same way as with the remote control unit supplied with the 6th-generation model

How to enter Integrator mode using the supplied remote control unit

① Enter the Standby mode.
② Press [MENU].
③ Press [TV ⏻].

Release TRAP SW-ERR

① Enter the Factory mode.
② Select the INITIALIZE mode.
③ Hold [DISPLAY] pressed for at least 5 seconds.

How to switch UART ① (Integrator)

① Enter the Integrator mode.
② Display "OFF" using [➡].
③ Change the communication speed using [⬇], then [➡].

How to switch UART ② (During Standby)

① Enter the Standby mode.
② Hold [VOL +] or [VOL -] pressed for 3 seconds.
③ Hold [SPLIT] pressed for 3 seconds.
④-1 To set to 232C, press [ENTER].
⑤-2 To set to SR+, press [HOME MENU].

Note: If switching is completed successfully, the red LED will flash twice.
Note 1: Use a remote control unit supplied with the 6th-generation models or later.
Note 2: Do not hold a key pressed for more than 5 seconds.

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[ ] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count
Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [⬇] four times.)

2. Confirmation of the Power-down and Shutdown histories

① **Panel system**
PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] three times.)
SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] four times.)

② **Main Assy**
Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [⬇] three times.)

3. How to display the Mask indication

① **Mask indication in the panel side**
1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] 8 times.)
2. Press [ENTER], then select a Mask indication, using [⬆] or [⬇].

② **Mask (SG screen) indication in the Main Assy (MAIN VDEC)**
1. Select either Input 1 or 2 or 4, to which no signal is input (black screen).
2. Select {INITIALIZE} then {SG MODE}. Press [⬅]. (After entering Factory mode, press [MUTING] three times, then press [⬇] once.) Then, the indication at the lower right of the screen changes from "OFF" to "ANA AD YCBCR".
3. You can change Mask patterns by pressing [⬇] to select {SG PATTERN} then using [⬅] or [➡].

Note: When you switch "SG MODE" routes, some displays become monochrome, as they are in Y-signal only mode.

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data
① Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, then press [ENTER].)
② Select {TRANSFER}, using [➡], then hold [SET] pressed for at least 5 seconds.
③ After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

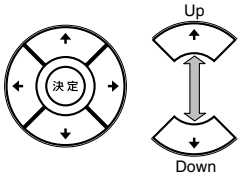
2. MAIN Assy (U): Execution of FINAL SETUP.
① Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER]. (After entering Factory mode, press [MUTING] three times, then press [⬇] four times.)
② Select "YES", using [➡]. Then hold [ENTER] pressed for at least 5 seconds.
③ After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value
① Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER], then press [⬇] six times.)
② Press [➡] to select "CLEAR". Hold [SET] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

4. Other Assys: Clearance of the maximum temperature value
① Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER], then press [⬇] seven times.)
② Press [➡] to select "CLEAR". Hold [SET] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②
Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [⬆] or [⬇].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER]. To return to the next nested layer above, also press [ENTER].

INFORMATION mode
1. VERSION (1)
2. VERSION (2), (3)
3. MAIN NG
4. TEMPERATURE
5. HOUR METER
6. HDMI SIGNAL INFO1, 2
7. VDEC SIGNAL INFO 2
8. DTV TUNING STATUS 1, 2, 3
9. DTV TV-GUIDE BER
10. DEBUG INFO

MUTING

INITIALIZE mode
1. SYNC DET
2. SG MODE
3. SG PATTERN
4. SIDE MASK LEVEL
5. FINAL SETUP
6. HMG/HG SERVICE MODE
7. CVT AUTO
8. HDMI INTR POSITION

MUTING

PANEL FACTORY mode
1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL REVICE
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP

MUTING

OPTION mode
1. EDID WRITE MODE
2. ANTENNA MODE
3. AFT

MUTING

Structure of Layers in Service Factory Mode

INFORMATION mode	
├1. VERSION (1)	Flash Versions for PANEL system and MAIN system
├2. VERSION (2)	Flash Versions for DTV system
├3. VERSION (3)	Flash Versions for CCD ucom and HM
├4. MAIN NG	SD histories for MAIN (Going Clear model by SET key)
│└4-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [SET] key
├5. TEMPERATURE	TEMP 1, TEMP2 and FAN mode are displayed
├6. HOUR METER	Hour meter and number of Power ON are displayed
│└6-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [SET] key
├7. HDMI SIGNAL INFO 1	For factory use
├8. HDMI SIGNAL INFO 2	Signal info of HDMI are displayed (Detail are on SM)
├9. VDEC SIGNAL INFO	For factory use
├10. DTV TUNING STATUS 1	Detail information for DTV is displayed
├11. DTV TUNING STATUS 2	Detail information for DTV is displayed
├12. DTV TUNING STATUS 3	Detail information for DTV is displayed
├13. DTV TV-GUIDE BER	For production line use
├14. DEBUG INFO	For factory use
PANEL FACTORY mode	Refer to [PANEL FACTORY MODE]
OPTION	
├1. EDID WRITE MODE	For factory use
├2. ANTENNA MODE	For production line use
├3. AFT	For production line use
INITIALIZE	
├1. SYNC DET (+)	For factory use
├2. SG MODE	SG signal from MAIN VDEC (Composite signal is required)
├3. SG PATTERN	For factory use
├4. SIDE MASK LEVEL(+)	For factory use
│├4-1. R MASK LEVEL	
│├4-2. G MASK LEVEL	
│└4-3. B MASK LEVEL	
├5. FINAL SETUP	Set to Factory default settings (it should perform after
│└5-1. DATA RESET	replacing a MAIN board)
├6. HMG/HG SERVICE MODE	Information for a USB device is displayed
│└6-1. MODE SIFT	
├7. CVT AUTO	For factory use
└8. HDMI INTR POSITION(+)	For factory use

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION	Version indication of the panel
2. PANEL WORKS	Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
3. POWER DOWN	Indication of the Power-down history
4. SHUT DOWN	Indication of the Shutdown history
5. PANEL-1 ADJ (+)	
├1. X-SUS B	Modification not required because these items are basically for factory presetting
├2. Y-SUS B	
├3. Y-SUSTAIL T1	
├4. Y-SUSTAIL T2	
├5. Y-SUSTAIL W	
├6. XY-RST W1	
├7. XY-RST W2	
├8. VOL SUS	Settings required after replacement of the panel
├9. VOL OFFSET	
├10. VOL RST P	
└11. SUS FREQ.	For AM noise prevention (Depending on the mode, brightness of the screen changes.)
6. PANEL-2 ADJ (+)	
├1. R-HIGH	Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
├2. G-HIGH	
├3 .B-HIGH	
├4. R-LOW	
├5. G-LOW	
├6. B-LOW	
└7. ABL	Setting of the power consumption. A setting table is available for each vertical signal.

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

7. PANEL REVISE (+)	
├R-LEVEL	Items for use by engineers
├G-LEVEL	
└B-LEVEL	
8. ETC (+)	
├1. BACKUP DATA	For transferring backup data (after replacement of the DIGITAL Assy)
├2. DIGITAL EEPROM	To clear data of the digital video
├3. PD INFO.	For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [➡], then hold [SET] pressed for at least 5 seconds. After clearance is completed, {ETC} is automatically selected.
├4. SD INFO.	
├5. HR-MTR INFO.	
├6. PM/B1-B5	
├7. P COUNT INFO.	
└8. MAX TEMP.	
9. RASTER MASK SETUP (+)	
├1. MASK OFF	For use while Raster Mask (full mask) is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. RST MASK 01	
≈ • • • • •	
└25. RST MASK 24	
10. PATTEN MASK SETUP (+)	
├1. MASK OFF	For use while Pattern Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. PTN MASK 01	
≈ • • • • •	
└40. PTN MASK 39	
11. COMBI MASK SETUP (+)	
├1. MASK OFF	For use while Combination Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. CMB MASK 01	
≈ • • • • •	
└11. CMB MASK 10	

1.3 JIGS LIST

■ Cleaning

Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning. Refer to "2.4 CHASSIS SECTION (1/2).
Cleaning paper	GED-008	

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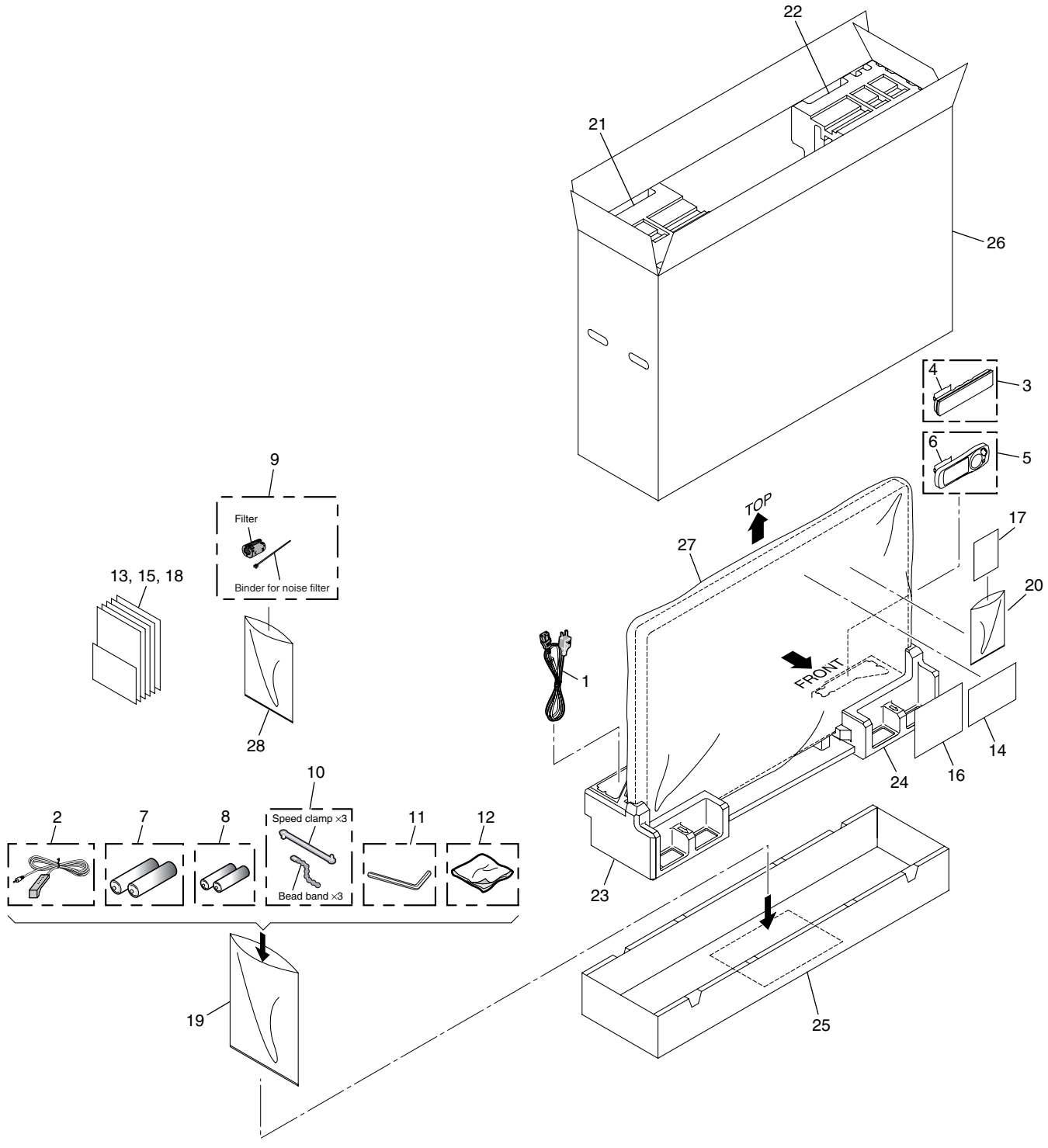
2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING SECTION



(1) PACKING PARTS LIST

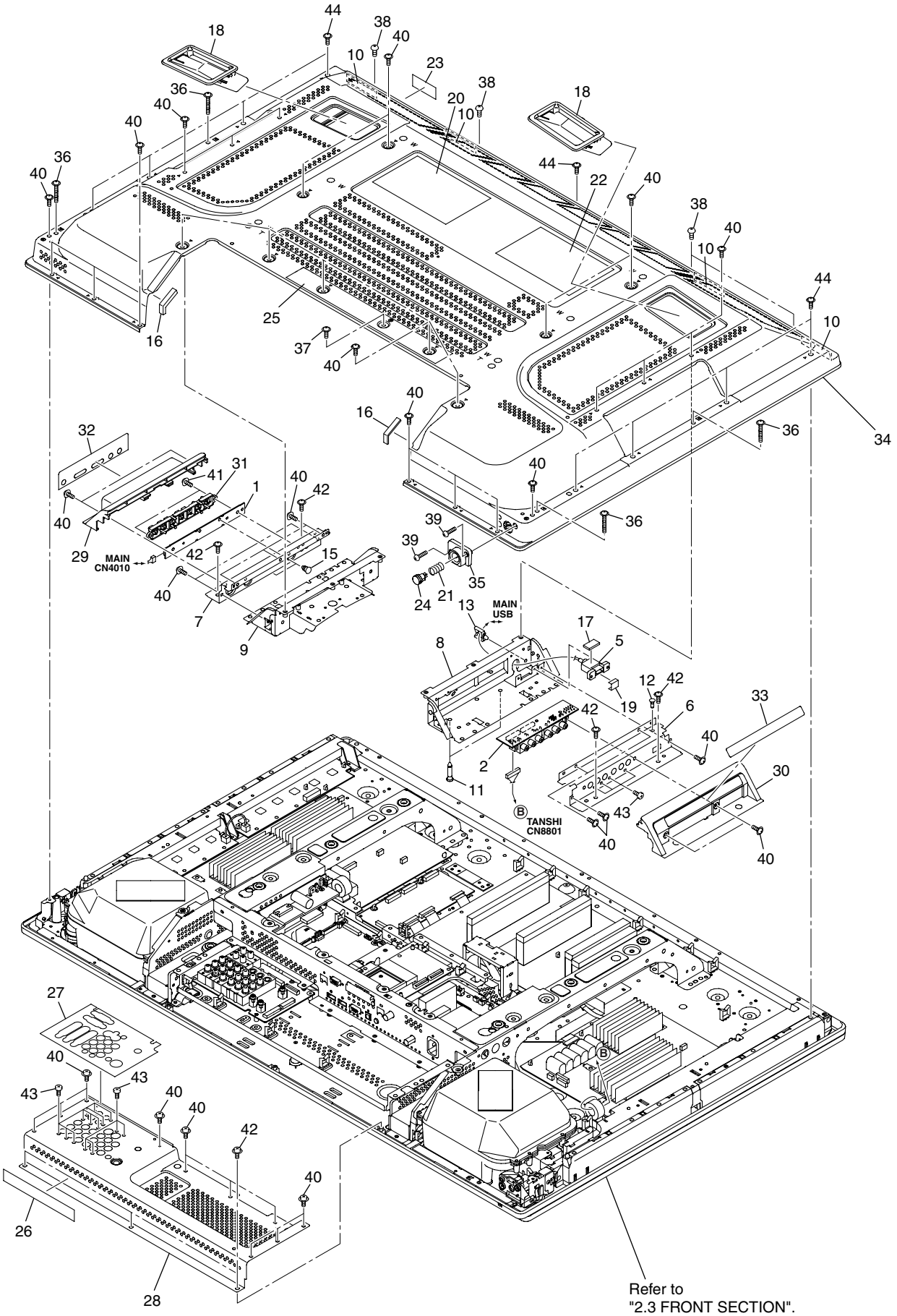
Mark	No.	Description	Part No.
⚠	1	Power Cord (2 m)	ADG1215
	2	G-LINK Cable (3 m)	VDX1010
	3	Remote Control Unit	AXD1536
	4	Battery Cover	AZN2680
	5	Simpled Remote Control Unit	See Contrast table (2)
	6	Battery Cover	See Contrast table (2)
NSP	7	Alkaline Dry Cell Battery (LR6, AA)	VEM1023
NSP	8	Dry Cell Battery (R03, AAA)	See Contrast table (2)
	9	Filter	CTX1054
	10	Binder Assy	AEC1908
NSP	11	Hexagonal Wrench (6 mm)	AEF1029
	12	Cleaning Cloth	AED1285
	13	Operating Instructions (English, French, Spanish)	ARE1426
	14	Caution Card	ARM1239
	15	Cleaning Caution (U)	ARM1303
	16	Accessory Caution	ARM1304
NSP	17	Warranty Card	ARY1196
NSP	18	Card (Register)	ARY1156
	19	Polyethylene Bag	AHG1394
	20	Vinyl Bag	AHG1347
	21	Pad (427 T-L)	AHA2567
	22	Pad (427 T-R)	AHA2568
	23	Pad (427 B-L)	AHA2594
	24	Pad (427 B-R)	AHA2595
	25	Under Carton (427)	AHD3482
	26	Upper Carton (427)	See Contrast table (2)
	27	Packing Sheet	AHG1352
	28	Polyethylene Bags	AHG1395

(2) CONTRAST TABLE

PDP-4271HD/KUCXC and PDP-4270HD/KUCXC are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4271HD /KUCXC	PDP-4270HD /KUCXC
	5	Simpled Remote Control Unit	AXD1539	Not used
	6	Battery Cover	AZN2682	Not used
NSP	8	Dry Cell Battery (R03, AAA)	VEM1036	Not used
	26	Upper Carton	AHD3483	AHD3511

2.2 REAR SECTION



(1) REAR SECTION PARTS LIST

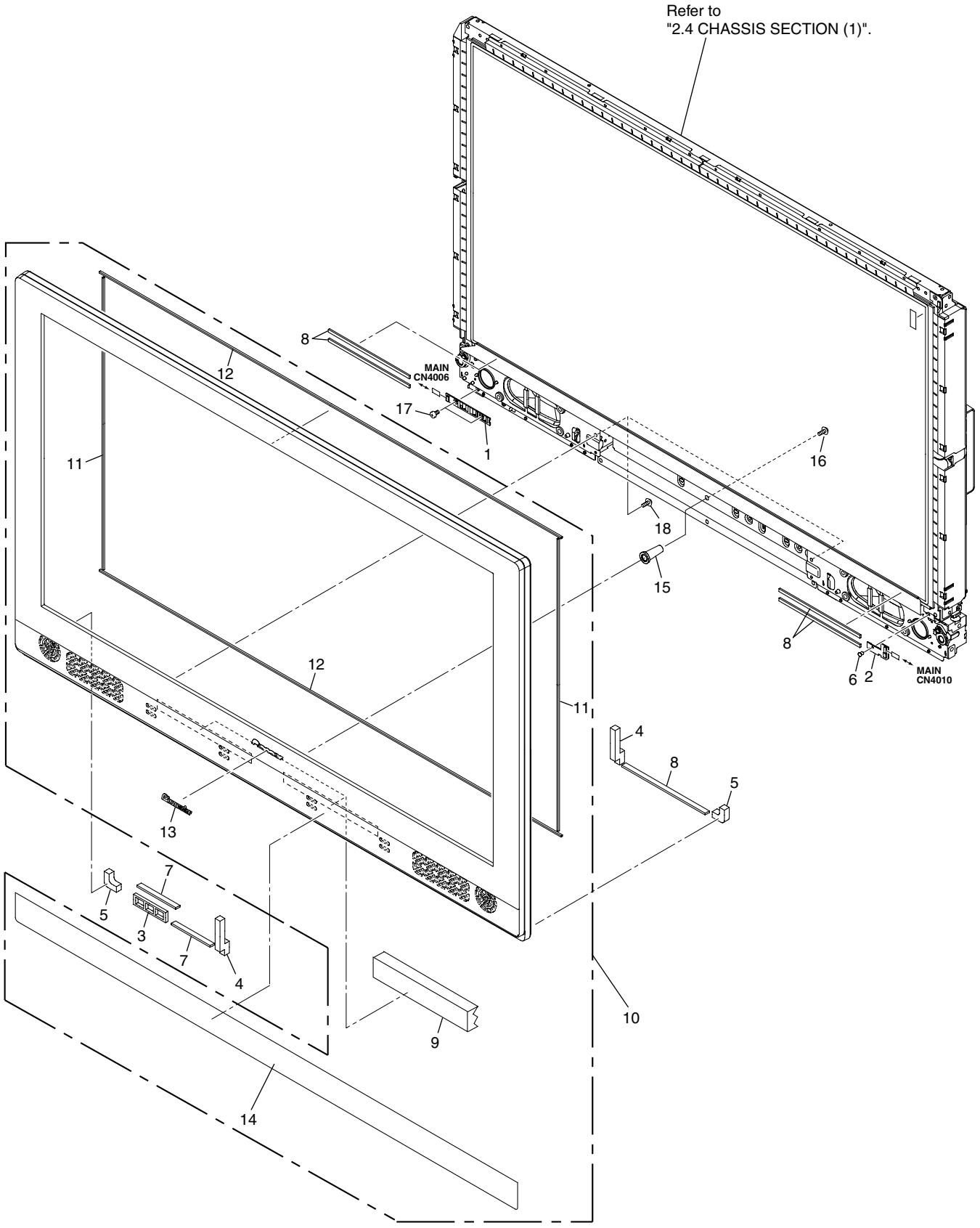
Mark	No.	Description	Part No.
	1	SIDE KEY Assy	AWW1133
	2	SIDE Assy	AWW1157
	3	• • • • • •	
	4	• • • • • •	
	5	USB Cable 90 cm (J301)	ADF1033
	6	Side Input Panel (U)	ANC2392
	7	Function Button Base	ANG2923
	8	Side Input Shield	ANK1834
	9	Function Button Shield	ANK1835
	10	Rear Case Cushion	AEB1439
NSP	11	PCB Support	AEC1288
	12	PCB Spacer	AEC1570
	13	Wire Saddle	AEC1745
	14	• • • • • •	AEC1818
	15	Locking Card Spacer	AEC2019
	16	Protection Sheet C	AED1300
	17	USB Spacer	AED1310
	18	Inner Grip Assy	AMR3434
	19	Gasket (USB)	ANK1846
NSP	20	Name Label (427PU)	See Contrast table (2)
	21	Coil Spring	ABH1125
	22	Bolt Caution Label	AAX3075
NSP	23	Serial Seal	AAX3182
	24	Power Button	AAD4145
	25	Terminal Display Label A (U/B)	AAX3325
	26	Terminal Display Label C (U/B)	AAX3330
	27	Terminal Display Label B (UB)	AAX3413
	28	Terminal Panel B (42U)	ANC2402
	29	Function Button Panel	AMB2906
	30	Side Input Cover	AMB2911
	31	Function Button	AAC1562
	32	Function Button Sheet (U)	AAK2895
	33	Input Cover Label U	AAX3363
	34	Rear Case (427)	ANE1655
	35	Power Button Holder	AMR3539
	36	Screw (3 x 40P)	ABA1332
	37	Screw	ABA1341
	38	Screw (4 x 18)	ABA1353
	39	Screw	BPZ30P140FTB
	40	Screw	AMZ30P060FTB
	41	Screw	AMZ30P080FTC
	42	Screw	APZ30P080FTB
	43	Screw	BPZ30P080FTB
	44	Screw	TBZ40P080FTB

(2) CONTRAST TABLE

PDP-4271HD/KUCXC and PDP-4270HD/KUCXC are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-4271PU /KUCXC	PDP-4270PU /KUCXC
NSP	20	Name Label	AAL2764	AAL2799

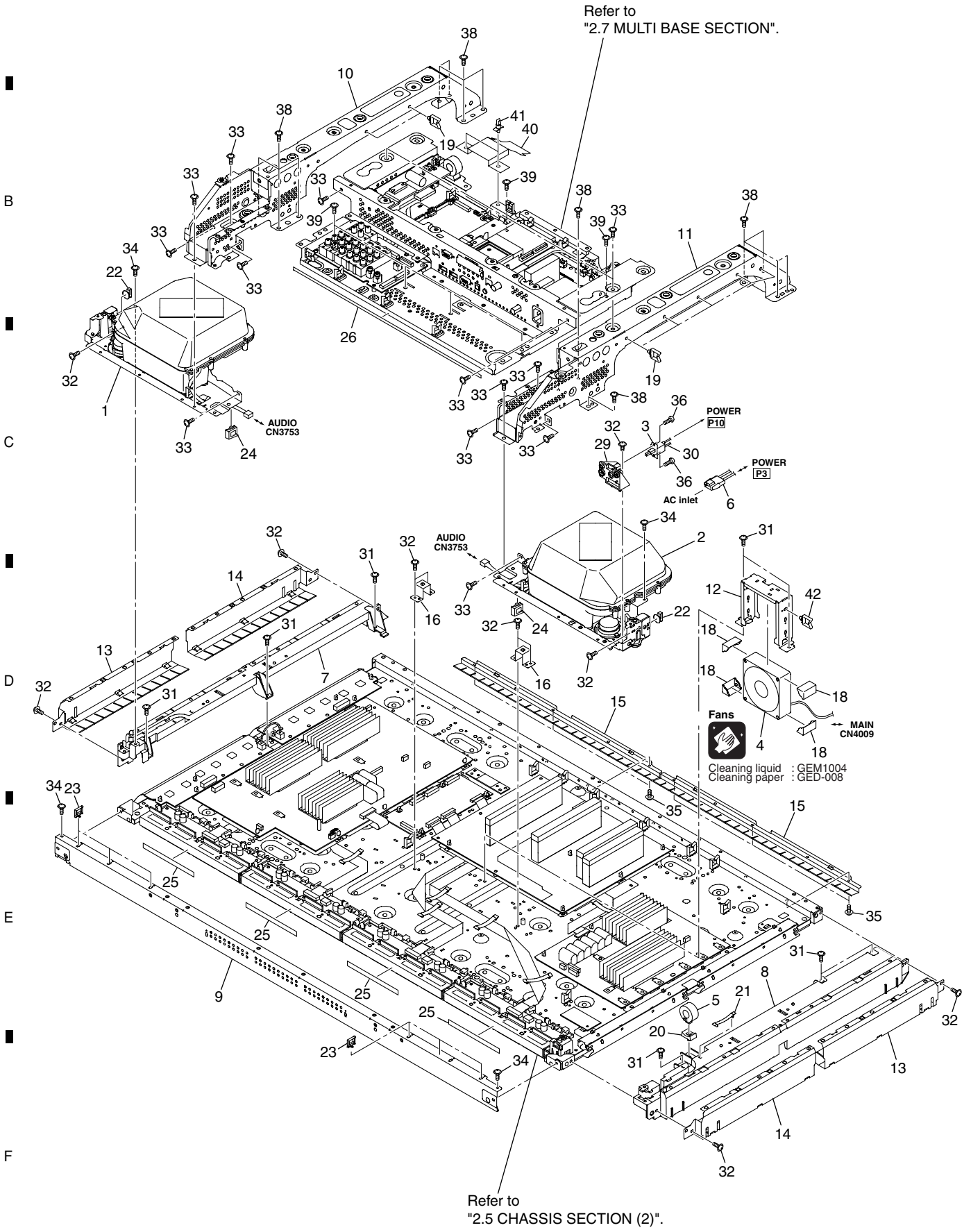
2.3 FRONT SECTION



(1) FRONT SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	42 & 60 LED Assy	AWW1134
	2	LED IR Assy	AWW1136
	3	Blind Cushion (427HX)	AEB1443
	4	Speaker Cushion	AEB1452
	5	Speaker Cushion S	AEB1460
	6	Nyron Rivet	AEC1671
	7	Insulation Sheet B	AED1284
	8	Insulation Sheet	AED1289
	9	Reinforcement Frame	AMR3620
	10	Front Case Assy (427PU)	AMB2967
	11	Panel Cushion V (42)	AED1301
	12	Panel Cushion H (42)	AED1309
	13	Pioneer Name Plate	AAM1096
	14	Punching Sheet (42B)	AAS1014
	15	Front Collar	AMR3541
	16	Screw (3 x 30P)	ABA1350
	17	Screw (M3 x 4)	ABA1354
	18	Screw	APZ30P080FTB

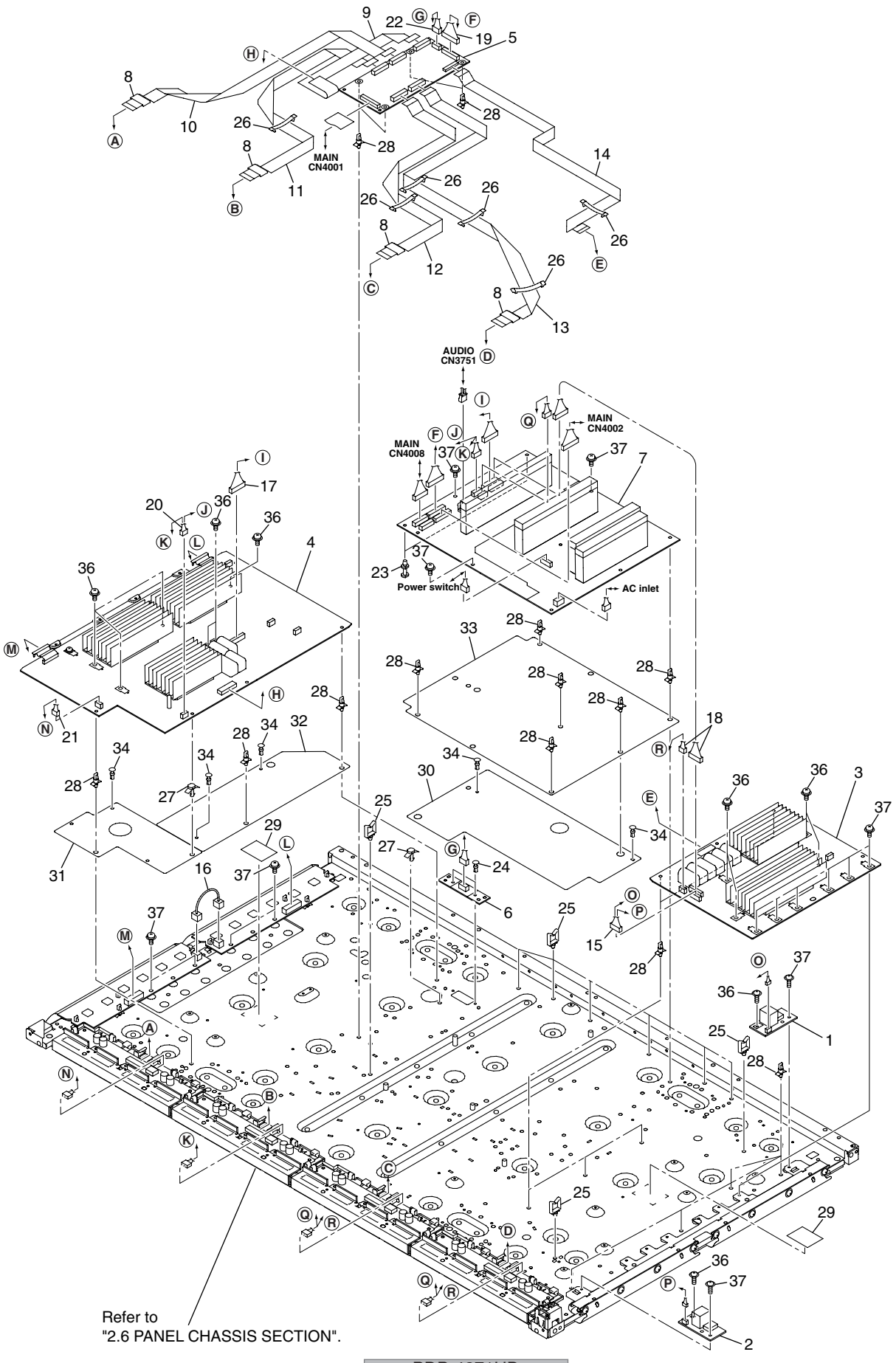
2.4 CHASSIS SECTION (1/2)



CHASSIS SECTION (1/2) PARTS LIST

Mark	No.	Description	Part No.
	1	Speaker Box Assy L	AMW1010
	2	Speaker Box Assy R	AMW1011
⚠	3	Power Switch (S1)	ASG1092
⚠	4	Fan Motor 80 x 25L	AXM1058
	5	Ferrite Core	ATX1044
	6	Housing Wire (42, 50)(J103)	ADX3352
	7	Front Chassis VL (427)	AMA1020
	8	Front Chassis VR (427)	AMA1021
	9	Front Chassis H Assy (427)	ANA1941
	10	Sub Frame Assy L (427)	ANA1943
	11	Sub Frame Assy R (427)	ANA1944
	12	Fan Holder	ANG2833
	13	Panel Holder V1 (427)	ANG2920
	14	Panel Holder V2 (427)	ANG2921
	15	Panel Holder H (427)	ANG2922
	16	Multi Base Holder	ANG2937
	17	• • • • •	
	18	Floating Rubber 80	AEB1427
	19	Wire Saddle	AEC1745
	20	Ferrite Core Holder	AEC1818
	21	Flat Clamp	AEC1879
	22	Locking Wire Saddle	AEC1948
	23	Mini Clamp	AEC2090
	24	Re-use Wire Saddle	AEC2091
	25	Address Gasket	ANK1877
⚠	26	Gasket D	ANK1840
	27	• • • • •	
	28	• • • • •	
	29	Switch Holder	AMR3540
	30	7P Housing Wire (J104)	ADX3353
	31	Screw	ABA1313
	32	Screw	ABZ30P080FTC
	33	Screw	AMZ30P060FTB
	34	Screw	APZ30P080FTB
	35	Screw	BBZ30P060FTC
	36	Screw	BPZ30P080FTB
	37	• • • • •	
	38	Screw	TBZ40P080FTB
	39	Screw	ABA1364
	40	FFC Shield	ANK1869
	41	Re-use PCB Spacer	AEC2087
	42	Re-use Wire Saddle	AEC1945

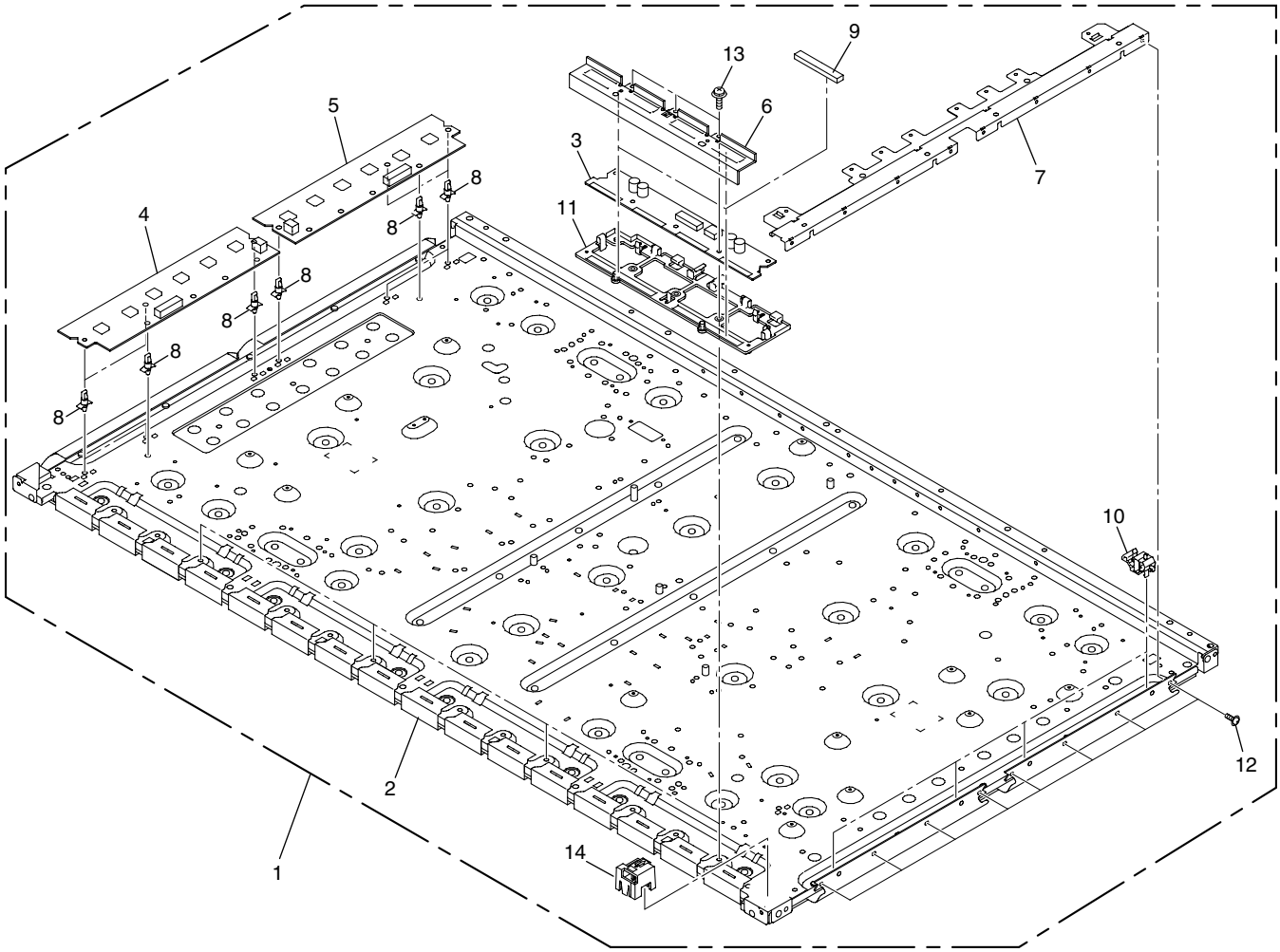
2.5 CHASSIS SECTION (2/2)



CHASSIS SECTION (2/2) PARTS LIST

Mark	No.	Description	Part No.
	1	SUS CLAMP 1 Assy	AWW1022
	2	SUS CLAMP 2 Assy	AWW1023
	3	42 X DRIVE Assy	AWW1196
	4	42 Y DRIVE Assy	AWV2400
	5	42 DIGITAL Assy	AWW1138
	6	SENSOR Assy	AWW1140
⚠	7	POWER SUPPLY Unit	AXY1153
	8	Ferrite Core	ATX1048
	9	Flexible Cable (J201)	ADD1429
	10	Flexible Cable (J202)	ADD1430
	11	Flexible Cable (J203)	ADD1431
	12	Flexible Cable (J204)	ADD1432
	13	Flexible Cable (J205)	ADD1433
	14	Flexible Cable (J206)	ADD1434
	15	6P Housing Wire (J118)	ADX3132
	16	3P Housing Wire (J119)	ADX3136
	17	9P Housing Wire (J101)	ADX3349
	18	8P&5/4P Housing Wire (J102)	ADX3350
	19	14P Housing Wire (J105)	ADX3354
	20	6P/4P Housing Wire (J108)	ADX3357
	21	4P Housing Wire (J109)	ADX3358
	22	5P Housing Wire (J110)	ADX3359
	23	Spacer	AEC1065
	24	Nyron Rivet	AEC1671
	25	Wire Saddle	AEC1745
	26	Flat Clamp	AEC1879
	27	PCB Support	AEC1938
	28	Re-use PCB Spacer	AEC2087
	29	Drive Silicone Sheet	AEH1095
	30	Power Supply Sheet B (507)	AMR3555
	31	Y Drive Protection Sheet A	AMR3632
	32	Y Drive Protection Sheet B	AMR3633
	33	Power Supply Sheet (427)	AMR3635
	34	Rivet A	BEC1158
	35	• • • • •	
	36	Screw	ABA1313
	37	Screw	ABA1364

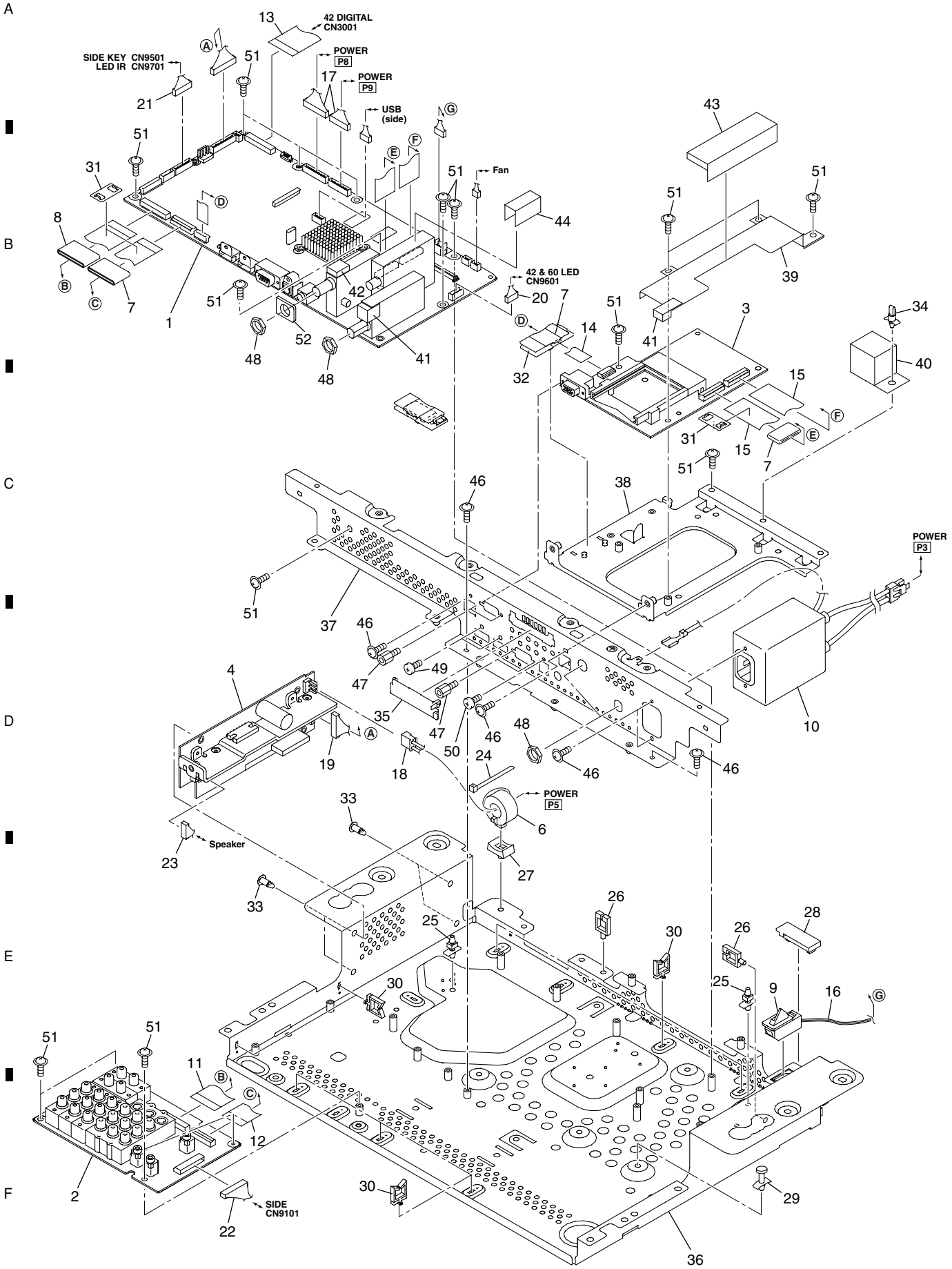
2.6 PANEL CHASSIS SECTION



PANEL CHASSIS SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (427S) Assy	AWU1185
NSP	2	Plasma Panel (42DC) Assy	AWU1161
NSP	3	42 ADDRESS Assy	AWV2335
NSP	4	42 SCAN A Assy	AWW1182
NSP	5	42 SCAN B Assy	AWW1183
	6	Address Heatsink	ANH1644
	7	Conductive Plate X	ANG2791
	8	Re-use PCB Spacer	AEC2087
	9	Address Silicone A	AEH1093
	10	Conductive Plate Holder	AMR3446
	11	Address Holder Assy	AMR3460
	12	Screw	ABA1364
	13	Screw	BBB30P120FNI
	14	Tube Cover (FT)	AMR3557

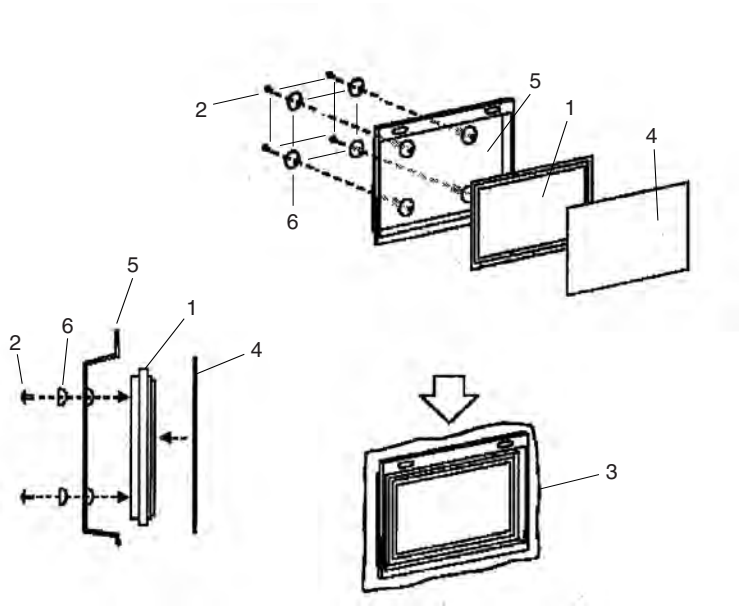
2.7 MULTIBASE SECTION



MULTIBASE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	MAIN Assy	AWV2312
	2	TANSHI Assy	AWW1156
	3	POD Assy	AWW1154
	4	42E AUDIO Assy	AWW1185
	5	• • • • •	
	6	Ferrite Core	ATX1044
	7	Ferrite Core	ATX1048
	8	Ferrite Core	ATX1064
⚠	9	Power Switch (S2)(TRAP)	ASG1089
⚠	10	AC Inlet (CN1)	AKP1301
	11	Flexible Cable (J210)	ADD1441
	12	Flexible Cable (J211)	ADD1442
	13	Flexible Cable (J207)	ADD1445
	14	Flexible Cable (J213)	ADD1446
	15	Flexible Cable (J214)(J215)	ADD1447
	16	3P Housing Wire (J121)	ADX3348
	17	13P&11P Housing Wire (J106)	ADX3355
	18	3P Housing Wire (J107)	ADX3356
	19	11P Housing Wire (J111)	ADX3360
	20	6P Housing Wire (J113)	ADX3362
	21	7/6/4P Housing Wire (J114)	ADX3363
	22	14P Housing Wire (J116)	ADX3366
	23	8/4P Housing Wire (J117)	ADX3367
	24	Binder	AEC-093
	25	Locking Card Spacer	AEC1429
	26	Wire Saddle	AEC1745
	27	Ferrite Core Holder	AEC1818
	28	Clamp	AEC1884
	29	Card Spacer	AEC1889
	30	Re-use Wire Saddle	AEC1945
	31	Ferrite Stopper	AEC1981
	32	Ferrite Clamp	AEC1986
	33	Locking Card Spacer	AEC2019
	34	Re-use PCB Spacer	AEC2087
	35	POD Cover	AMR3542
	36	Multi Base (U) Assy	ANA1951
	37	Terminal Panel A (U/B)	ANC2394
	38	POD Stay A	ANG2933
	39	Tuner Stay U	ANG3028
⚠	40	Gasket AV8	ANK1881
⚠	41	Gasket J	ANK1862
⚠	42	Gasket UA	ANK1866
⚠	43	Gasket UB	ANK1867
	44	Tuner Shield Assy	ANK1891
	45	• • • • •	
	46	Screw	AMZ30P060FTB
	47	Hex. Head Screw	BBA1051
	48	Nut	BBN1005
	49	Screw	BMZ30P060FTB
	50	Screw	BPZ30P080FTB
	51	Screw	PMB30P080FNI
	52	Gasket UD	ANK1883

2.8 PDP SERVICE PANEL ASSY (AWU1208)



PDP SERVICE PANEL ASSY 427 (AWU1208) PARTS LIST

Mark	No.	Description	Part No.	
NSP	1	P. Chassis (427) Assy	AWU1171	
		Caution Label	AAX3031	x2
NSP		Drive Voltage Label	ARW1097	
	2	Screw	PMB50P150FTC	x4

ACCESSORY 1

	Vinyl Bag S	AHG1338	
	Screw	ABA1351	x3
	Wire Saddle	AEC1745	x9
	PCB Support	AEC1938	x2
	Rivet A	BEC1158	x5

ACCESSORY 2

NSP	Vinyl Bag	AHG1340	
	Y Drive Sheet A	AMR3632	
	Power Sheet (427) A	AMR3648	
	Gasket Address (42)	ANK1877	x4

PACKING PARTS

	Pad 42SINGLE(T-L)	AHA2550	
	Pad 42SINGLE(T-R)	AHA2551	
	Pad 42SINGLE(B-L)	AHA2552	
	Pad 42SINGLE(B-R)	AHA2553	
	Upper Carton (42SINGLE)	AHD3480	
3	Under Carton (42SINGLE)	AHD3481	
4	Polyethylene Bag	AHG1381	
	Packing Sheet	AHG1386	

Mark	No.	Description	Part No.	
	5	Tray (FT)	AHX1158	
	6	Cup Spacer (15)	ANG2936	x4

2.9 TABLE TOP STAND

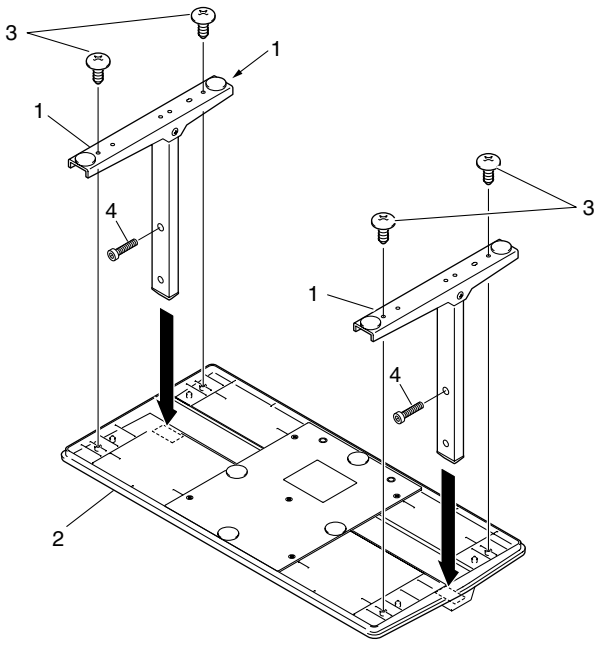


TABLE TOP STAND PARTS LIST

Mark No.	Description	Part No.
1	Stand Pipe Assy	AXY1144
2	Base Cover Assy	AXY1145
3	Screw	ABA1357
4	Screw	SMZ80H300FTC

3. PCB PARTS

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10[1]* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10[3]* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→	*R50*	*RN2H R 5 0 K*
1 Ω	→	*1R0*	*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10[1]* →	*5621*	*RN1/4PC 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark No.	Description	Part No.
NSP	1..PANEL CHASSIS (427S) ASSY	AWU1185
NSP	2..42 ADDRESS ASSY	AWV2335
NSP	2..42 SCAN ASSY	AWV2362
NSP	3..42 SCAN A ASSY	AWW1182
NSP	3..42 SCAN B ASSY	AWW1183
NSP	1..42 X DRIVE ASSY	AWV2399
	2..42 X DRIVE ASSY	AWW1196
	2..SUS CLAMP 1 ASSY	AWW1022
	2..SUS CLAMP 2 ASSY	AWW1023
	1..42 Y DRIVE ASSY	AWV2400
NSP	1..42 DIGITAL ASSY	AWV2301
	2..42 DIGITAL ASSY	AWW1138
	2..SENSOR ASSY	AWW1140
	1..MAIN ASSY (US BB)	AWV2312
NSP	1..I/O ASSY	AWV2313
	2..POD ASSY	AWW1154
	2..TANSHI ASSY	AWW1156
	2..SIDE ASSY	AWW1157
NSP	1..42E AUDIO FUKUGO ASSY	AWV2369
	2..42E AUDIO ASSY	AWW1185
	2..SIDE KEY ASSY	AWW1133
	2..42 & 60 LED ASSY	AWW1134
	2..LED IR ASSY	AWW1136
⚠	1..POWER SUPPLY UNIT	AXY1153

42 DIGITAL ASSY

Mark No.	Description	Part No.
[DIGITAL IF BLOCK]		
MISCELLANEOUS		
	F3001	CCG1162
	CN3001	AKM1353
	CN3002	AKM1235
RESISTORS		
	R3007, 3010–3016	RAB4C470J
	R3020–3022	RAB4C103J
	Other Resistors	RS1/16SS###J
[MODULE UCOM BLOCK]		
SEMICONDUCTORS		
	IC3151	AGC1011
	IC3152, 3153	SN74AHC541PW
	IC3155	SN74AHC08PW
	IC3156	BR24L04FJ-W
	IC3157	M62334FP
	IC3159	TC7W126FU
	IC3160, 3161	TC74VHC123AFTS1
	Q3151	2SJ461A
	D3151, 3152, 3154, 3155	DAN202U
	D3158, 3159, 3161–3163	1SS355
MISCELLANEOUS		
	X3151	CSS1616
	CN3151	AKM1276
	CN3152	CKS4828
RESISTORS		
	R3155, 3160, 3170, 3176	RAB4C101J
	R3174	RAB4C103J
	Other Resistors	RS1/16SS###J
CAPACITORS		
	C3151	CEHVKW470M6R3
	C3152, 3153, 3155–3158	CKSSYB104K10
	C3159, 3171, 3172, 3182	CKSRYB105K6R3
	C3162, 3163, 3165, 3166	CKSSYB104K10
	C3164	CCSSCH101J50
	C3167	CKSSYB103K16
	C3168, 3170, 3181	CKSSYB104K10
[PANEL FLASH BLOCK]		
SEMICONDUCTORS		
	IC3301	AGC1010
	IC3302, 3305	PST3628UR
	IC3303	SN74AHC08PW
	IC3304	PST3610UR
	Q3301	RN1901
	Q3302	HN1C01FU
MISCELLANEOUS		
	X3302 (102.5 MHz)	ASS1188
	CN3301	CKS4835
RESISTORS		
	R3307, 3308	RAB4C101J

Mark No.	Description	Part No.
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C3301–3303, 3306, 3308	CKSSYB104K10
	C3304, 3307, 3309	CKSSYB472K16
	C3305, 3310	CKSSYB102K50
	C3311	CCSRCH470J50
	C3315, 3316	CKSSYB104K10
	C3317	CCSRCH471J50
	[SQ ASIC BLOCK]	
	SEMICONDUCTORS	
	IC3401	PEG239A
	MISCELLANEOUS	
	L3401–3403	QTL1013
	F3401, 3402	CCG1162
	RESISTORS	
	R3402, 3412	RAB4C101J
	R3405–3407, 3409, 3410	RAB4C220J
	R3416	RAB4C220J
	R3425	RS1/16SS5601F
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C3401, 3402, 3419, 3425	CEHVKW101M6R3
	C3403–3413, 3417, 3418	CKSSYB104K10
	C3420–3424, 3426–3432	CKSSYB104K10
	C3445–3448	CKSSYB104K10
	[ADDRESS CN BLOCK]	
	SEMICONDUCTORS	
	Q3501, 3502	RN1901
	D3501, 3502	DAN202U
	MISCELLANEOUS	
	CN3501–3504, 3506	AKM1348
	CN3505	VKN1310
	RESISTORS	
	R3519, 3520	RAB4C472J
	R3521, 3522, 3525	RAB4C101J
	R3524	RAB4C222J
	Other Resistors	RS1/16SS###J
	[DIGITAL DD CON BLOCK]	
	SEMICONDUCTORS	
	IC3601	BA80BC0WFP
	MISCELLANEOUS	
	U3601	AXY1137
	RESISTORS	
	R3611	RAB4C101J
	Other Resistors	RS1/16SS###J

Mark No.	Description	Part No.
	CAPACITORS	
	C3609	CKSSYB104K10
	C3611	CKSQYB105K16
	C3612 (100 μF/16 V)	ACH1394
	C3613	CKSSYB103K16

SENSOR ASSY

	SEMICONDUCTORS	
	IC3651	MM1522XU
	IC3652	BR24L02FJ-W
	Q3651	HN1B04FU
	MISCELLANEOUS	
	CN3651	AKM1276
	All Resistors	RS1/16SS###J
	CAPACITORS	
	C3651, 3653	CKSRYB105K6R3
	C3652, 3654	CKSSYB103K16
	C3656, 3657	CKSSYB104K10

MAIN ASSY

	MISCELLANEOUS	
	8001	ANH1645
	8002	AEB1417
⚠	8003	ADE1196
	SEMICONDUCTORS	
	IC6902	AGC1008
	IC8202	AGC1007
	IC8301	AGC1016
	IC8402	AGC1006
	[BOARD IF BLOCK(U)]	
	SEMICONDUCTORS	
	IC4001–4005	TC74VCX541FT
	Q4001, 4002	DTC124EUA
	Q4003	RN2902
	Q4004	DTA124EUA
	MISCELLANEOUS	
⚠	L4001–4005	BTX1042
	F4001–4003, 4011–4016	CTF1557
	F4005, 4006	VTF1084
	CN4001, 4004	AKM1349
	CN4005	AKM1348
	CN4006	KM200NA6
	CN4009	AKM1274
	CN4013	AKM1233
	CN4018	AKM1213
	RESISTORS	
	R4001	RAB4CQ470J
	R4002, 4018	RS1/16S102J
	R4012, 4017, 4048	RS1/16S75R0F
	R4016	RS1/16S0R0J
	R4021–4024 (47 Ω, 1/16 W)	BCN1067

Mark No.	Description	Part No.
R4073, 4074		RS1/10S0R0J
Other Resistors		RS1/16SS###J

CAPACITORS

C4001–4003, 4007, 4027		CKSSYB104K10
C4004		CCSSCH101J50
C4006, 4009, 4010, 4026		CCSSCH221J50
C4011, 4012, 4017, 4018	(10 µF/10 V)	DCH1201
C4013, 4020, 4021, 4023		CKSSYB102K50
C4014		CKSSYF104Z16
C4016	(10 µF/16 V)	ACG1128
C4019, 4022, 4025, 4030		CKSRYB102K50
C4024		CKSSYB102K50
C4033, 4036, 4039		CKSRYB102K50
C4043		CKSSYB104K10
C4051–4053		CCSSCH470J50

[POWER 0 BLOCK(U)]

SEMICONDUCTORS

IC4101, 4105	S-1132B18-U5
IC4102, 4103	LTC3412EFE
IC4104, 4111	NJM2846DL3-05
IC4106	NJM2886DL3-15
IC4107	NJM2846DL3-33
IC4108	NJM2846DL3-18
IC4110	PQ090DNA1ZPH
Q4101, 4110	RN1902
Q4104	DTC124EUA
Q4105, 4106	UPA1917TE
Q4107, 4108, 4112, 4113	2SC4116
Q4109	2SD2114K
D4101–4110	1SS355
D4111, 4114, 4115	1SS357

MISCELLANEOUS

L4101	BTX1042
L4102, 4106	BTX1039
L4108, 4109 (1.0 µH)	ATH1194

RESISTORS

R4107, 4110, 4134–4136	RS1/10S0R0J
R4119, 4131, 4146	RS1/16SS3003D
R4120	RS1/16SS2003D
R4123, 4145	RS1/16SS1502F
R4124	RS1/16SS6202D
R4129	RS1/16SS3903D
R4133	RS1/16SS1503D
R4139	RS1/10S0R0J
R4148	RS1/16S102J
Other Resistors	RS1/16SS###J

CAPACITORS

C4101, 4103, 4106, 4108		CKSRYB105K10
C4102, 4104, 4105, 4107	(10 µF/10 V)	DCH1201
C4109, 4111, 4116, 4119	(10 µF/10 V)	DCH1201
C4110, 4117		CCSSCH101J50
C4112		CCG1232
C4113, 4128		CKSSYB103K16
C4114	(100 µF/6.3 V)	BCG1050
C4120, 4121, 4135, 4156		CKSSYB104K10
C4122		CCSSCH220J50
C4124, 4126	(10 µF/16 V)	DCH1165
C4125		CKSRYB104K16
C4127		CKSRYB105K10
C4129		CCSSCH390J50
C4132, 4133, 4136, 4137	(22 µF/10 V)	BCG1059
C4138, 4140		CCSSCH221J50
C4139		CCSRCH101J50
C4142	(22 µF/10 V)	BCG1059
C4147		CCSRCH102J50
C4165	(10 µF/10 V)	DCH1201
C4172		CKSSYB104K10

[ATUNER BLOCK(U)]

SEMICONDUCTORS

IC4401	TC74HC4066AFT
IC4402	AN5832SA
Q4401, 4416	DTC124EUA
Q4402, 4405, 4409, 4417	2SA1586
Q4403	DTA124EUA
Q4404, 4406–4408, 4410	2SC4116
Q4411	2SC4116
Q4413–4415	HN1B04FU
Q4418	2SA1586
D4401	1SS355
D4402	UDZS30(B)

MISCELLANEOUS

L4401–4405 (10 µH)	BTH1121
F4401–4404	VTF1080
K4401, 4402	AKX1061
⚠U4401	AXF1169
⚠U4402	AXF1171

RESISTORS

R4407, 4429	RS1/16SS1002F
Other Resistors	RS1/16SS###J

CAPACITORS

C4401, 4406		CKSRYF104Z50
C4403, 4410		CCSRCH821J50
C4404, 4409		CKSQYB105K16
C4405		CKSRYB224K16
C4408		CCSRCH331J50
C4411, 4412		CKSRYB334K10
C4413		CKSSYB102K50
C4414, 4415		CCSSCH270J50
C4416, 4417		CCSSCH221J50
C4421		CKSSYB223K16
C4422, 4423, 4425, 4426		CEHVKW101M6R3
C4427		CEHVKW220M16
C4428		CKSSYB333K16
C4429–4431, 4448–4450		CKSSYB104K10
C4432, 4443	(10 µF/10 V)	DCH1201
C4433, 4454		CEHVKW101M6R3
C4435, 4437, 4439		CKSSYF104Z16
C4438, 4444, 4446, 4451	(2.2 µF/10 V)	CCG1205
C4447	(4.7 µF/10 V)	ACG1122
C4452	(10 µF/50 V)	ACH1417

Mark No.	Description	Part No.
C4453	(3.3 µF/50 V)	ACH1418
C4455		CKSSYB104K10
C4456		CKSRYB102K50
C4457		CCSSCH120J50
C4458		CCSSCH101J50
C4459		CEHVKW221M10

[AV SW BLOCK]

SEMICONDUCTORS

IC4701	R2S11002AFT
IC4702, 4704	NJM12904V
IC4703	TC4052BFT
Q4701–4703, 4706, 4707	2SA1586
Q4708	HN1A01FU
Q4709, 4711, 4714	UMD2N
Q4712, 4713, 4722	2SC4116
Q4716	HN1C01FU
Q4719–4721	2SA1586
Q4723–4725	2SC5233
D4701–4703, 4706	1SS301
D4705	1SS355

RESISTORS

R4704	RS1/16S1001F
R4705	RS1/16S2700F
R4724, 4725	RS1/16S5600F
R4728, 4731	RS1/16S1800F
R4770, 4771	RS1/16S681J
R4772, 4774, 4778, 4779	RS1/16S102J
R4783, 4787, 4795, 4796	RS1/16S182J
R4793, 4814, 4815	RS1/16S821J
R4794, 4811, 4813	RS1/16S221J
R4804, 4806, 4807, 4817	RS1/16S182J
R4818	RS1/16S182J
Other Resistors	RS1/16SS###J

CAPACITORS

C4701, 4702, 4704–4716	CKSRYB105K10
C4717, 4720	CCSRCH181J50
C4718, 4721	CCSRCH681J50
C4719, 4724, 4725, 4728	CKSRYB105K10
C4723, 4726, 4729–4731	CKSSYB104K10
C4727, 4732, 4734 (10 µF/10 V)	DCH1201
C4735 (4.7 µF/10 V)	ACG1122
C4736, 4740–4742, 4746	CKSRYB104K16
C4738, 4739, 4743, 4744 (2.2 µF/10 V)	CCG1205
C4745 (10 µF/16 V)	DCH1165
C4747–4749, 4751, 4752 (10 µF/10 V)	DCH1201
C4750	CCSRCH331J50
C4753	CKSSYB473K16
C4754	CKSRYB224K10
C4757, 4760, 4761 (10 µF/10 V)	DCH1201
C4758, 4759	CKSSYF104Z16
C4762, 4763 (2.2 µF/10 V)	CCG1205
C4768 (470 µF/10 V)	ACH1454
C4770	CKSRYB105K10

[RG BSW BLOCK(U)]

Mark No.	Description	Part No.

SEMICONDUCTORS

IC4901	R2S11001FT
Q4901–4904	2SA1586

RESISTORS

R4914	RAB4CQ102J
R4932	RS1/16S5600F
R4934	RS1/16S1800F
R4935, 4938	RS1/16S821J
R4942	RS1/16S102J
Other Resistors	RS1/16SS###J

CAPACITORS

C4901–4903, 4911, 4916	CKSRYB105K10
C4904–4906, 4909, 4910	CKSSYB104K10
C4907, 4908	CCSSCH680J50
C4912–4915, 4917–4919	CKSSYB103K16
C4920	CKSRYB105K10
C4921–4927	CKSSYB103K16
C4932, 4933 (10 µF/10 V)	DCH1201

[VDEC BLOCK(U)]

SEMICONDUCTORS

IC5101	UPD64015AGM-UEU
IC5102	EDS1616AGTA-75-E

MISCELLANEOUS

L5101–5103	BTX1042
X5102 (24.576 MHz)	ASS1191

RESISTORS

R5101–5103, 5138 (22 Ω, 1/16 W)	ACN1246
R5104, 5105 (47 Ω, 1/16 W)	BCN1067
R5106–5108	RS1/16S0R0J
R5114	RS1/16SS6200D
R5120, 5123, 5124	RS1/16SS2000F
R5127	RS1/16S334J
R5133	RAB4CQ220J
R5137	RS1/10S0R0J
Other Resistors	RS1/16SS###J

CAPACITORS

C5101–5105	CKSSYB103K16
C5106, 5107	CCSSCH8R0D50
C5108	CKSSYB102K50
C5109, 5110, 5154, 5155 (10 µF/10 V)	DCH1201
C5114–5124, 5127–5129	CKSSYB104K10
C5134, 5135, 5156–5165	CKSSYB104K10
C5167–5170, 5172–5174	CKSSYB104K10
C5177–5180	CKSSYB104K10

[ADC BLOCK(U)]

SEMICONDUCTORS

IC5301	AD9985KSTZ-110

RESISTORS

R5301–5303 (47 Ω, 1/16 W)	BCN1067
R5304, 5306–5308	RS1/16SS470J

Mark No.	Description	Part No.
R5305		RS1/16SS2701F
R5310, 5311		RS1/10S0R0J
Other Resistors		RS1/16S###J

CAPACITORS

C5301		CKSSYB823K10
C5302		CKSSYB822K16
C5303–5305		CKSSYB473K16
C5307–5316, 5318, 5319		CKSSYB104K10

[HDMI BLOCK(U)]

SEMICONDUCTORS

IC5401		SII9023CTU
IC5402		PCM1754DBQ
IC5403, 5404		BR24L02FJ-W
Q5401, 5402		HN1K02FU
Q5407, 5408		UMD2N
Q5413, 5414		RN1902
D5401, 5402		1SS301
D5407, 5408		UDZS6R8(B)

MISCELLANEOUS

JA5401, 5402		AKP1278
X5401	(28.322 MHz)	ASS1192

RESISTORS

R5401–5403	(100 Ω, 1/16 W)	BCN1071
R5415		RS1/10S0R0J
R5450		RAB4CQ473J
R5451		RAB4CQ100J
R5452, 5455		RAB4CQ103J
R5454		RAB4CQ470J
Other Resistors		RS1/16SS###J

CAPACITORS

C5401, 5402		CCSSCH120J50
C5403, 5404, 5407–5412		CKSSYB104K10
C5405, 5452, 5473	(10 µF/10 V)	DCH1201
C5406, 5453		CCSSCH101J50
C5416, 5419–5446		CKSSYB104K10

[CCD BLOCK(U)]

SEMICONDUCTORS

IC4601		PEG150A
IC4602, 4603		NJM2561F1
Q4601, 4602		2SA1586

MISCELLANEOUS

X4601	(16 MHz)	ASS1159

RESISTORS

R4603, 4648–4661, 4666		RAB4CQ473J
R4664		RAB4CQ102J
R4667		RAB4CQ473J
Other Resistors		RS1/16SS###J

CAPACITORS

C4601–4605, 4608, 4609		CKSSYB104K10
C4606, 4607	(2.2 µF/10 V)	CCG1205
C4612, 4613		CKSSYB102K50
C4614, 4615		CCSSCH221J50
C4616		CCSSCK2R0C50
C4617		CKSSYB153K16
C4618, 4619	(10 µF/10 V)	DCH1201
C4620, 4621		CCSRCH331J50
C4622, 4623		CCSRCH5R0C50
C4627, 4630, 4631		CKSSYB104K10

[DTUNER BLOCK(U)]

SEMICONDUCTORS

IC6001		MCP3021A5-I/OTG
IC6002, 6003		UPC3219GV
IC6004, 6005		MM1565AF
Q6001		DTC124EUA
Q6002		2SC4116
Q6003–6005		2SC5084
Q6006		BB504CDS
D6001–6003		1SS355
D6004		UDZS30(B)

MISCELLANEOUS

L6001, 6002	(10 µH)	BTH1121
L6003		LCTAW1R5J2520
L6004		LCYA10NJ2520
L6006		LCYAR82J2520
F6001		BTF1130
F6002–6006		VTF1084
F6007		ATF1219
F6008, 6009		VTF1080
⚠U6001		AXF1167

RESISTORS

R6011		RS1/16SS6801F
R6023		RS1/16SS2201F
R6024		RS1/16SS4703F
R6025		RS1/16SS1502F
R6026		RS1/16SS6802F
R6027		RS1/16SS5602F
R6028		RS1/16SS4701F
R6041		RS1/16SS1001F
Other Resistors		RS1/16SS###J

CAPACITORS

C6001	(100 µF/6.3 V)	ACH1442
C6004, 6005, 6008		CKSSYB104K10
C6006		CKSQYB225K10
C6007, 6043	(1 µF/35 V)	BCG1064
C6009, 6010		CKSSYB471K50
C6011, 6012, 6014–6017		CKSSYB103K16
C6013		CCSSCK2R0C50
C6019, 6022–6031, 6034		CKSSYB103K16
C6032, 6033		CKSSYB102K50
C6035		CKSSYB103K16
C6036		CEHVKW101M6R3
C6038, 6040		CKSQYB105K16
C6039, 6041, 6042	(10 µF/10 V)	DCH1201

[QPSK BLOCK(U)]

Mark No.	Description	Part No.
SEMICONDUCTORS		
IC6101		UPC3220GR
MISCELLANEOUS		
L6101		LCTAW1R5J2520
L6102		LCYA56NJ2520
L6103, 6104		LCYA68NJ2520
L6105, 6106		LCYA82NJ2520
L6107		LCYAR10J2520
F6101		ATF1215
F6102		VTF1084
All Resistors		RS1/16SS###J
CAPACITORS		
C6101, 6103, 6105		CCSSCH270J50
C6102		CCSSCH100D50
C6104		CCSSCH120J50
C6106		CCSSCH560J50
C6107		CKSSYB271K50
C6108, 6109, 6115–6120		CKSSYB103K16
C6110, 6112, 6114, 6121		CKSSYB102K50
C6111, 6113		CCSSCH390J50
C6123		CKSSYB102K50
C6124–6126		CCSSCH101J50
[F/E IC BLOCK(U)]		
SEMICONDUCTORS		
IC6201		BCM3517KQLGB0
MISCELLANEOUS		
L6201		BTX1042
L6202		LCTAW1R8J2520
F6201–6205		VTF1084
X6201	(54 MHz)	BSS1134
RESISTORS		
R6211, 6213		RS1/16S3010F
R6237		RAB4CQ101J
R6238, 6240		RAB4CQ330J
Other Resistors		RS1/16SS###J
CAPACITORS		
C6201, 6203, 6206, 6208	(10 µF/10 V)	DCH1201
C6202, 6204, 6205	(22 µF/10 V)	BCG1059
C6209–6219, 6222–6232		CKSSYB103K16
C6220, 6221, 6233		CCSSCH120J50
C6234		CCSSCH150J50
C6235–6237, 6240–6252		CKSSYB103K16
C6239		CKSSYB102K50
C6253, 6254, 6256		CKSSYB104K10
[7038_0 BLOCK(U)]		
SEMICONDUCTORS		
IC6301		BCM7038KPB1G-B2
MISCELLANEOUS		
F6301–6310		VTF1084
F6312		ATX1058

Mark No.	Description	Part No.
RESISTORS		
R6302, 6346		RAB4CQ472J
R6303–6305, 6308–6310	(4.7K Ω, 1/16 W)	BCN1072
R6313		RAB4CQ102J
R6336		RAB4CQ101J
Other Resistors		RS1/16SS###J
CAPACITORS		
C6301	(100 µF/6.3 V)	ACH1442
C6302–6306	(22 µF/10 V)	BCG1059
C6307–6320		CKSSYB103K16
C6321	(470 µF/16 V)	ACH1421
C6322–6357, 6361, 6364		CKSSYB104K10
C6360, 6362, 6365, 6366		CKSSYB102K50
C6367, 6368		CKSSYB104K10
C6369	(10 µF/10 V)	DCH1201
[7038 1 BLOCK(U)]		
SEMICONDUCTORS		
Q6401		RN1901
MISCELLANEOUS		
F6401–6412		VTF1084
RESISTORS		
R6401		RS1/16SS1002F
R6402, 6404		RS1/16SS1101F
R6405–6407, 6410–6412		RS1/16SS75R0F
R6420		RAB4CQ102J
R6444	(100 Ω, 1/16 W)	BCN1071
R6445	(47 Ω, 1/16 W)	BCN1067
Other Resistors		RS1/16SS###J
CAPACITORS		
C6401	(10 µF/10V)	DCH1201
C6402		CCSSCH150J50
C6403–6414		CKSSYB103K16
C6416–6428		CKSSYB104K10
[7038 DDR BLOCK(U)]		
SEMICONDUCTORS		
IC6601		LP2995M
IC6602–6605		EDD2516AKTA-6B
MISCELLANEOUS		
L6601		BTX1039
CAPACITORS		
C6602, 6607–6611		CKSSYB103K16
C6603–6606		CKSSYB104K10
C6612, 6620, 6633, 6642		CKSSYB471K50
C6613–6619, 6621, 6622		CKSSYB103K16
C6624, 6625, 6627–6632		CKSSYB103K16
C6634–6641, 6643, 6645		CKSSYB103K16
C6648		CEHVKW331M6R3
C6649–6651	(22 µF/10 V)	BCG1059
[DDR REG BLOCK(U)]		
RESISTORS		

Mark No.	Description	Part No.
	R6783, 6788–6790, 6795	RAB4CQ101J
	R6784–6787, 6791–6794	RAB4CQ220J
	R6796, 6801, 6802, 6816	RAB4CQ101J
A	R6797–6800, 6803–6806	RAB4CQ220J
	R6807–6809, 6811, 6839	RAB4CQ510J
	R6810, 6812–6815	RAB4CQ220J
	R6817–6820, 6824–6827	RAB4CQ220J
	R6821–6823, 6828, 6829	RAB4CQ101J
	R6830–6833, 6836–6838	RAB4CQ220J
	R6834, 6835	RAB4CQ101J
	R6840	RAB4CQ220J
	Other Resistors	RS1/16SS###J
B	**CAPACITORS**	
	C6704–6711	CKSSYB103K16
	C6801–6803 (10 µF/10 V)	DCH1201
	[7038 FLASH BLOCK(U)]	
	SEMICONDUCTORS	
	IC6901	TC7WH02FU
	IC6903	BR24L64F-W
	Q6901	2SA1586
	Q6902	UMD2N
	Q6903	2SC4116
C	D6902, 6903	UDZS4R7(B)
	MISCELLANEOUS	
	L6901	LCTAW2R2J2520
	F6901–6904	CTF1557
	JA6901	AKN1073
	X6901 (54 MHz)	BSS1134
	CN6901	BKP1159
	RESISTORS	
D	R6912, 6913	RS1/16S3010F
	R6952	RAB4CQ472J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C6901 (10 µF/10 V)	DCH1201
	C6902–6908	CCSSCH101J50
	C6909	CKSRYB105K10
	C6911, 6916	CCSSCH8R0D50
	C6912, 6913	CCSSCH120J50
	C6915, 6919	CKSSYB103K16
E	C6917, 6923, 6924	CKSSYB104K10
	[DT VDEC BLOCK(U)]	
	SEMICONDUCTORS	
	IC7001	TVP5160PNP
	IC7002	EDS1616AGTA-75-E
	Q7004	2SC4116
	MISCELLANEOUS	
	F7001–7006	VTF1084
F	F7007	ATX1058
	X7001 (14.31818 MHz)	BSS1119

Mark No.	Description	Part No.
	RESISTORS	
	R7001–7003, 7009	RAB4CQ101J
	R7004, 7005 (4.7 KΩ, 1/16 W)	BCN1072
	R7010–7013	RAB4CQ510J
	R7014 (100 KΩ, 1/16 W)	BCN1071
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C7001–7003, 7005 (10 µF/10 V)	DCH1201
	C7006	CKSSYB102K50
	C7014, 7015	CCSSCH100D50
	C7016–7054	CKSSYB104K10
	[DT AV BLOCK(U)]	
	SEMICONDUCTORS	
	IC7101	PCM1803DB
	IC7102, 7104, 7107	NJM2068V
	IC7103, 7106	NJM2746V
	IC7105	R5520H001B
	MISCELLANEOUS	
	L7101, 7102 (220 µH)	BTH1107
	L7103, 7104	BTX1042
	L7106	ATH1160
	F7101–7103	VTF1084
	JA7101	VKS1001
	CN7101	AKM1276
	RESISTORS	
	R7103, 7119	RS1/16SS2402F
	R7104, 7118	RS1/16SS1002F
	R7107, 7109	RAB4CQ103J
	R7110	RAB4CQ101J
	R7144, 7145, 7151, 7152	RS1/16SS3302F
	R7155, 7156, 7195, 7196	RS1/16SS3302F
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C7102, 7165, 7174, 7177 (10 µF/16 V)	DCH1165
	C7103, 7109, 7110 (10 µF/10 V)	DCH1201
	C7107, 7108	CKSRYB105K10
	C7111–7114	CCSRCH331J50
	C7115, 7117, 7119, 7120	CKSSYB103K16
	C7116, 7118	CKSSYB271K50
	C7122–7124, 7130	CCSSCH220J50
	C7125, 7131, 7148, 7154	CKSSYB391K50
	C7127, 7128, 7150, 7151	CCSSCH560J50
	C7132, 7133, 7155, 7156	CKSSYB103K16
	C7135 (470 µF/16 V)	ACH1421
	C7136, 7138, 7166, 7167	CKSSYB104K10
	C7139, 7140, 7162, 7163	CKSSYB821K50
	C7145–7147, 7153	CCSSCH220J50
	C7171–7173	CKSSYB104K10
	[VIDEO BLOCK(U)]	
	SEMICONDUCTORS	
	IC7201	PE5436A
	MISCELLANEOUS	
	L7201	BTX1042

Mark No.	Description	Part No.
RESISTORS		
R7202, 7207, 7208, 7211		RAB4CQ0R0J
R7212, 7215		RAB4CQ472J
R7214, 7249 (47 Ω, 1/16 W)		BCN1067
R7248		RAB4CQ470J
R7251		RAB4CQ101J
Other Resistors		RS1/16SS###J
CAPACITORS		
C7201–7206		CKSSYB104K10
C7208, 7209, 7211–7214		CKSSYB102K50
C7210		CKSSYB471K50
C7220	(10 μF/10 V)	DCH1201
[POD BLOCK(U)]		
SEMICONDUCTORS		
IC7301		TC74LCX245FTS1
IC7302		CIMAXSP2L
IC7303		TC74LCX257FT
IC7304		TC74LCX244FTS1
IC7305, 7306		TC74LCX373FT
MISCELLANEOUS		
F7301, 7302		ATX1058
F7303		VTF1084
CN7301, 7302		AKM1354
RESISTORS		
R7305, 7317, 7333–7335		RAB4CQ470J
R7323, 7339, 7342 (47 Ω, 1/16 W)		BCN1067
R7336, 7338, 7343		RAB4CQ103J
R7337, 7341		RAB4CQ470J
R7340		RAB4CQ0R0J
R7344–7346 (47 Ω, 1/16 W)		BCN1067
Other Resistors		RS1/16SS###J
CAPACITORS		
C7301–7303, 7305		CKSSYB102K50
C7304		CCSSCH680J50
C7306–7315, 7319, 7320		CKSSYB104K10
C7321–7323		CKSSYB102K50
[POWER 1 BLOCK(U)]		
SEMICONDUCTORS		
IC7401		NJM2370U09
IC7402		NJM2871BF05
IC7403		MM1563DF
IC7405, 7406, 7408		NJM2846DL3-33
IC7407		NJM2846DL3-18
D7402–7408		1SS355
MISCELLANEOUS		
L7401, 7403		BTX1042
F7401		VTF1084
RESISTORS		
R7401, 7407		RS1/10S0R0J
Other Resistors		RS1/16SS###J

Mark No.	Description	Part No.
CAPACITORS		
C7401, 7403, 7406–7408		CKSSYB104K10
C7405		CKSRYB104K16
C7409		CKSQYB225K10
C7412		CKSSYB103K16
C7413		CKSSYB471K50
C7415		CEHVKW470M16
C7416		CEHVKW220M16
C7417–7420, 7423, 7424	(10 μF/10 V)	DCH1201
C7421	(1 μF/25 V)	BCG1060
C7422, 7426, 7428		CKSRYB105K10
C7427	(22 μF/10 V)	BCG1059
C7429	(10 μF/10 V)	DCH1201
[POWER_2 BLOCK(U)]		
SEMICONDUCTORS		
IC7501		PQ200WNA1ZPH
IC7502–7505		R1224N102H
IC7506		PST3628UR
Q7501, 7502		2SA1586
Q7503–7506		CPH6311
Q7507		DTC124EUA
Q7508–7510		RN1901
D7501–7504		D1FM3
D7505		1SS355
MISCELLANEOUS		
L7501, 7504		ATH1161
L7502, 7503	(10 μH)	ATH1192
L7505, 7506		BTX1042
RESISTORS		
R7502–7504		RS1/4S1R5J
R7505, 7506		RS1/4S3R3J
R7507, 7508		RS1/10S271J
R7511, 7538		RS1/16SS2202F
R7530		RS1/16SS5102F
R7531		RS1/16SS8201F
R7532		RS1/16SS9101F
R7533		RS1/16SS2402F
R7539		RS1/16SS3302F
R7550, 7565		RS1/16SS5602F
R7551, 7566		RS1/16SS1202F
Other Resistors		RS1/16SS###J
CAPACITORS		
C7501, 7502	(100 μF/6.3 V)	ACH1442
C7503		CKSSYB104K10
C7504, 7508, 7513		CKSSYB103K16
C7506, 7507		CKSSYB102K50
C7509		CKSSYB332K50
C7511, 7512, 7517, 7519		CKSRYB105K10
C7514, 7516		CEHVKW101M6R3
C7518, 7520, 7521, 7524	(10 μF/10 V)	DCH1201
C7522, 7523, 7525, 7528		CKSRYB105K10
C7526, 7527, 7529, 7530	(10 μF/10 V)	DCH1201
[DSEL BLOCK(U)]		

Mark No.	Description	Part No.
SEMICONDUCTORS		
	IC8001	PD6523A
	IC8002	TC74LCX125FT
A	IC8003	TC74VCX574FT
MISCELLANEOUS		
	L8001, 8002	BTX1042
	F8001, 8002	VTF1080
	⚠F8004	ATX1058
	X8001 (100 MHz)	ASS1194
RESISTORS		
	R8001–8003 (68 Ω, 1/16 W)	ACN1251
B	R8004–8006 (100 Ω, 1/16 W)	BCN1071
	R8026, 8027	RAB4CQ101J
	Other Resistors	RS1/16SS###J
CAPACITORS		
	C8001	CCSRCH221J50
	C8002	CKSSYB102K50
	C8003, 8006–8013	CCSSCH221J50
	C8004	CKSSYF104Z16
	C8005, 8014–8025, 8027	CKSSYB104K10
	C8026, 8028–8030 (10 µF/10 V)	DCH1201
C		
[IP BLOCK(U)]		
SEMICONDUCTORS		
	IC8101	PE5504B
	IC8102, 8103	EDS6432AFTA-75-E
MISCELLANEOUS		
	L8101–8104	BTX1042
	F8101	ATX1058
D		
RESISTORS		
	R8101–8104, 8106–8110 (47 Ω, 1/16 W)	BCN1067
	R8105 (100 Ω, 1/16 W)	BCN1071
	R8111, 8116 (22 Ω, 1/16 W)	ACN1246
	R8112–8115, 8117 (68 Ω, 1/16 W)	ACN1251
	R8123	RAB4CQ103J
	R8135	RAB4CQ470J
	R8136	RAB4CQ101J
	Other Resistors	RS1/16SS###J
E **CAPACITORS**		
	C8101	CKSSYB102K50
	C8102, 8126 (10 µF/10 V)	DCH1201
	C8103–8106, 8108–8111	CCSSCH221J50
	C8107, 8112–8120	CKSSYB104K10
	C8121–8125, 8127–8129	CCSSCH221J50
	C8134–8147	CKSSYB104K10
[MULTI BLOCK(U)]		
SEMICONDUCTORS		
F	IC8201	PEG121B
	IC8203	TC74VCX08FTS1

Mark No.	Description	Part No.
MISCELLANEOUS		
	L8201–8204	BTX1042
RESISTORS		
	R8201–8205 (22 Ω, 1/16 W)	ACN1246
	R8206–8208, 8255 (68 Ω, 1/16 W)	ACN1251
	R8214, 8215, 8248	RAB4CQ103J
	R8225, 8245 (100 Ω, 1/16 W)	BCN1071
	R8246 (10 KΩ, 1/16 W)	BCN1073
	R8249	RAB4CQ680J
	R8250	RS1/10S0R0J
	Other Resistors	RS1/16SS###J
CAPACITORS		
	C8202	CKSSYB102K50
	C8203–8206, 8221–8234	CKSSYB104K10
	C8207, 8240–8242 (10 µF/10 V)	DCH1201
	C8208–8220	CCSSCH221J50
	C8235 (22 µF/10 V)	BCG1059
	C8239	CKSSYB104K10
[IF UCOM BLOCK(U)]		
SEMICONDUCTORS		
	IC8302	PST9230N
	IC8303	TC74VHC08FTS1
	IC8304	TC7W126FU
	IC8305	TC74VHC00FTS1
	IC8306	MAX3232CPW
	IC8307	TC74VHC125FTS1
	Q8303–8305	DTC124EUA
	Q8306, 8307	2SA1586
	D8301–8304	1SS355
MISCELLANEOUS		
	X8301	ASS1168
	X8302 (32.768 KHz)	ASS1172
	CN8301	AKP1213
RESISTORS		
	R8322	RAB4CQ473J
	R8348–8352	RAB4CQ103J
	Other Resistors	RS1/16SS###J
CAPACITORS		
	C8301	CKSSYB472K25
	C8302, 8303	CCSSCH220J50
	C8305, 8321	CKSSYB471K50
	C8306–8311, 8314–8320	CKSSYB104K10
	C8312, 8313 (10 µF/10 V)	DCH1201
[MAIN UCOM BLOCK(U)]		
SEMICONDUCTORS		
	IC8401	MB91305PMC-G-BND
	IC8403	PST3628UR
	IC8407	PQ200WNA1ZPH
	IC8409	BR24L64F-W
	IC8410, 8411	TC74VHC125FTS1
	Q8401	2SJ461A
	Q8402	DTC124EUA

Mark No.	Description	Part No.
Q8403, 8404		HN1K02FU
D8401		1SS355
D8402		SML-311UT

MISCELLANEOUS

K8401, 8402		AKX9002
X8401		CSS1616
CN8401		AKM1353

RESISTORS

R8401, 8402	(330 Ω, 1/16 W)	ACN1248
R8411, 8466, 8467		RAB4CQ101J
R8447		RS1/16SS5602F
R8457, 8458		RS1/16S0R0J
R8463		RS1/16SS1502F
R8464		RS1/16SS4701F
R8465		RS1/16SS3301F
R8481		RS1/16SS2002F
Other Resistors		RS1/16SS###J

CAPACITORS

C8402–8413		CCSSCH470J50
C8414, 8415, 8418, 8419		CKSSYB102K50
C8417		CCSSCH221J50
C8420		CKSSYB472K25
C8421, 8425		CKSSYB103K16
C8427, 8462	(10 μF/16 V)	DCH1165
C8430–8437, 8439–8445		CKSSYB104K10
C8452–8461, 8463		CKSSYB104K10

TANSHI ASSY(UBB)

SEMICONDUCTORS

Q8901		HN1B04FU
D8808–8810		1SS302
D8821		UDZS5R1(B)
TH8901		TH05-3H103F

MISCELLANEOUS

F8801–8807, 8821–8823		CTF1557
JA8801		AKB1338
JA8803, 8805		AKB1331
JA8806		VKN1449
JA8807		AKB1334
JA8808, 8809		AKB1332
JA8811		AKN1081
CN8802		AKM1349
CN8803		AKM1348

RESISTORS

R8801, 8802		RS1/10S151J
R8811–8816, 8850, 8860		RS1/16S75R0F
R8861, 8874–8876		RS1/16S75R0F
R8880–8882, 8898		RS1/16S75R0F
R8901		RS1/16S4701F
R8911		RS1/16S102J
Other Resistors		RS1/16SS###J

CAPACITORS

Mark No.	Description	Part No.
C8801–8806, 8810–8812		CKSRYB105K10
C8809, 8902		CKSSYF104Z16
C8815	(10 μF/10 V)	DCH1201
C8818, 8819		CKSSYB473K16
C8820–8826, 8901		CKSSYB103K16
C8832, 8833, 8843–8857		CKSRYB105K10
C8858	(470 μF/10 V)	ACH1454

POD ASSY(U)

SEMICONDUCTORS

IC9001		BR24C21FJ
IC9002		TC74VHC08FTS1
IC9003		TC7WH123FU
Q9005		UMD2N
D9001, 9002, 9007, 9008		UDZS5R6(B)
D9003, 9009		1SS301

MISCELLANEOUS

JA9001		AKP1305
CN9001, 9002		AKM1348
CN9003		CKS3826
CN9004		AKP1214

RESISTORS

R9008, 9016–9020		RAB4CQ0R0J
R9022–9026		RAB4CQ0R0J
Other Resistors		RS1/16SS###J

CAPACITORS

C9001, 9017–9020, 9200	(10 μF/10 V)	DCH1201
C9002, 9014, 9015		CKSSYF104Z16
C9012, 9013		CCSRCH220J50
C9016		CKSRYB105K10
C9201	(10 μF/10 V)	DCH1201

SIDE ASSY(UBB)

MISCELLANEOUS

9102, 9103		VNE1949

SEMICONDUCTORS

D9105, 9106		UDZS9R1(B)

MISCELLANEOUS

JA9101		AKB1303
JA9102		AKB1305
All Resistors		RS1/16SS###J

CAPACITORS

C9105, 9106		CKSRYB105K10
C9114		CKSSYF104Z16

AUDIO ASSY

MISCELLANEOUS

3772, 3773		PMB30P100FNI
3774, 3775		VBB30P100FNI

Mark No.	Description	Part No.
	SEMICONDUCTORS	
	IC3751	LA4625
A	IC3752	PQ120DNA1ZPH
	IC3753	NJW1183GK1
	Q3751, 3754, 3755, 3757	2SA1586
	Q3756, 3759	2SC4116
	Q3758, 3760	DTC124EUA
	D3751	1SS355
	MISCELLANEOUS	
	⚠F3751, 3752	ATF1224
	KN3751, 3752	VNF1084
B	CN3751	B3P-VH
	RESISTORS	
	R3803	RD1/2MMF2R2J
	Other Resistors	RS1/16S###J
	CAPACITORS	
	C3752, 3753	CEHAT2R2M50
	C3754, 3805	CFTLA103J50
	C3755	CEHAT472M25
	C3757	CEHAT471M25
C	C3758, 3760, 3796	CKSRYB103K50
	C3759	CEHAT331M16
	C3761, 3764, 3786, 3798	CEHAT101M16
	C3762	CEHAT220M50
	C3763	CEHATR47M50
	C3766, 3780, 3783–3785	CEHAT1R0M50
	C3767, 3770, 3781, 3782	CFTLA104J50
	C3769, 3815	CKSRYB222K50
	C3771–3774, 3787, 3789	CKSRYB224K16
	C3775, 3777, 3788, 3790	CEHAT100M50
	C3778	CFTLA334J50
D	C3779	CKSRYB822K50
	C3791, 3799	CEHAT100M50
	C3792–3795, 3806, 3807	CFTLA104J50
	C3797, 3808, 3812, 3814	CEHAT1R0M50
	C3800, 3801	CKSRYB224K16
	C3811	CFTLA223J50
	C3813	CFTLA104J50
	C3816, 3817 (1.2 µF/63 V)	ACH1456
	C3818–3821	CCSRCH221J50
	C3822–3825	CKSRYB682K50
E	C3826–3829	CKSRYF104Z50
	C3838, 3839	CEHAT4R7M50

SIDE KEY ASSY

	MISCELLANEOUS	
	⚠L9501–9504	QTL1013
	S9501–9507	CSG1155
	All Resistors	RS1/16S###J
F	**CAPACITORS**	
	C9501	CKSRYF104Z16
	C9502, 9503	CCSRCH101J50

Mark No.	Description	Part No.

42 & 60 LED ASSY

	SEMICONDUCTORS	
	D9601	SML-521MDW
	D9602	TLRV1022
	D9603	SML512BC4T
	MISCELLANEOUS	
	CN9601	AKP1303
	All Resistors	RS1/16S###J
	CAPACITORS	
	C9606, 9610, 9614	CKSSYF103Z50
	C9611	CKSRYF103Z50

LED IR ASSY

	SEMICONDUCTORS	
	IC9702	SBX3050-01
	Q9701	2SA1586
	D9701	1SS302
	D9703	SML-521MDW
	MISCELLANEOUS	
	CN9701	AKP1303
	RESISTORS	
	R9701, 9702, 9707, 9712	RS1/16S0R0J
	R9713	RS1/16S121J
	R9714	RS1/16S331J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C9701	CKSSYB102K50
	C9702	CKSSYF104Z16
	C9703 (10 µF/6.3 V)	ACG7046
	C9704	CKSSYF103Z50
	C9705	CKSRYF103Z50
	All Resistors	RS1/16S###J

42 X DRIVE ASSY

	MISCELLANEOUS	
	1001	BMZ30P080FTC
	1001	ANH1637
	1002	AEH1092
	1002	ANH1639

42 X DRIVE ASSY

[42X LOGIC BLOCK]

	SEMICONDUCTORS	
	IC1001	TC74ACT541FT
	IC1002	TC74VHC00FTS1
	MISCELLANEOUS	
	CN1001	VKN1310

Mark No.	Description	Part No.
RESISTORS		
R1001, 1003		RAB4C470J
R1008, 1009, 1020		RAB4C472J
Other Resistors		RS1/16S###J
CAPACITORS		
C1001, 1002		CKSRYB104K16
C1003		CEHAT470M16
C1004		CCSRCH680J50
[42X RESONANCE BLOCK]		
SEMICONDUCTORS		
IC1101		AXF1145
IC1141		BA10393F
Q1141		2SC4116
D1101–1105		D1FL40
MISCELLANEOUS		
L1101, 1102		ATH1155
L1103–1106		ATH1193
RESISTORS		
R1101	(3.3 Ω, 1/2 W)	ACN1168
R1106		ACN1252
R1121		RS2MMF100J
R1122, 1123		RS1/10S104J
R1142, 1146		RS1/10S1003F
R1148, 1150		RS1/16S5601F
R1151, 1155		RS1/16S6801F
Other Resistors		RS1/16S###J
CAPACITORS		
C1101, 1112, 1113	(0.22 µF/250 V)	ACG1112
C1102, 1146		CKSRYB105K6R3
C1103		CKSYB105K25
C1105		CCG1186
C1121	(470 pF/630 V)	ACG1126
C1141, 1142, 1144, 1145		CKSRYB104K16
C1161–1164, 1166	(3.3 µF/250 V)	ACE1168
C1167, 1168	(3300 pF/630 V)	ACG1129
[42X SUS BLOCK]		
SEMICONDUCTORS		
IC1201		MM1565AF
IC1202		AXF1143
IC1251		TND301S
IC1252		PS9117
IC1271		TND307TD
Q1251		2SC2412K
Q1272		2SK3325
D1201		1SS355
D1251		UDZS5R6(B)
D1252		CRH01
D1281		1SS302
D1282		UDZS16(B)
MISCELLANEOUS		
L1201, 1205, 1231	(10 µH)	LFEA100J
L1204, 1211	(1.0 µH)	ATH1186
F1201		CTF1449
KN1201–1206, 1208–1211		ANK-142
CN1201		B8B-EH
CN1202		B6B-EH
RESISTORS		
R1204	(2.2 Ω, 1/2 W)	ACN1166
R1213	(3.3 Ω, 1/2 W)	ACN1168
R1276, 1277		RS3LMF331J
Other Resistors		RS1/16S###J
CAPACITORS		
C1204, 1207, 1223, 1251		CKSRYF104Z50
C1206		CEHAT101M25
C1208		CEHAT470M16
C1211, 1225–1227, 1297	(3300 pF/630 V)	ACG1129
C1212, 1213	(280 µF/250 V)	ACH1424
C1214–1217	(2.2 µF/250 V)	ACE1178
C1220		CKSYB105K25
C1221		CKSRYB105K6R3
C1222, 1272		CEHAT470M25
C1231		CEHAT101M10
C1253, 1273		CKSRYF104Z50
C1283		CEHAT2R2M2E
C1298	(3300 pF/630 V)	ACG1129
[42X D-D CON BLOCK]		
SEMICONDUCTORS		
IC1321		PS2701A-1(L)
IC1326		TA76431FR
Q1301, 1323		2SD1898
Q1302		2SC4081
Q1321, 1325, 1351		HN1C01FU
Q1324		2SA1037K
D1301, 1302, 1326, 1327		CRH01
D1303, 1324		1SS301
D1304, 1307, 1325, 1328		1SS355
D1306, 1323, 1331		UDZS5R1(B)
D1321		D1FK60
D1329, 1330		UDZS4R7(B)
MISCELLANEOUS		
VR1321		CCP1392
T1301		ATK1159
T1321		ATK1160
RESISTORS		
R1321, 1322, 1326, 1339		RS1/10S224J
R1337		RAB4C472J
Other Resistors		RS1/16S###J
CAPACITORS		
C1301, 1303, 1323		CKSRYB103K50
C1302, 1321		CEHAT101M25
C1304, 1306		CKSRYB104K16
C1307, 1324, 1327		CKSYB105K25
C1325	(22 µF/250 V)	ACH1428

Mark No.	Description	Part No.
C1326		CEHAT100M50

SUS CLAMP 1 ASSY

SEMICONDUCTORS

D1631		DF20L60U

MISCELLANEOUS

KN1631		VNF1084
KN1632		ANK-142
CN1631		B3B-EH

CAPACITORS

C1632	(1.2 μF/250 V)	ACE1179

SUS CLAMP 2ASSY

SEMICONDUCTORS

D1641		DF20L60U

MISCELLANEOUS

KN1641		VNF1084
KN1642		ANK-142
CN1641		B3B-EH

CAPACITORS

C1642	(1.2 μF/250 V)	ACE1179

42 Y DRIVE ASSY

MISCELLANEOUS

2001	AEH1092
2001	ABA1349
2001	ANG2790
2001	ANH1638
2002	BMZ30P080FTC
2002	ANH1639

[42Y LOGIC BLOCK[

SEMICONDUCTORS

IC2001, 2004	TC74ACT541FT
IC2002	TC74ACT540FT
IC2003, 2005	TC74VHC08FTS1

MISCELLANEOUS

CN2001	AKM1348

RESISTORS

R2001, 2002, 2017, 2021	RAB4C470J
R2003, 2006	RAB4C101J
R2004, 2005, 2019, 2020	RAB4C472J
R2038, 2039	RAB4C472J
Other Resistors	RS1/16S###J

CAPACITORS

C2001, 2002, 2004–2006	CKSSYB104K10
C2003	CEHAT470M16
C2008	CCSRCH680J50

[42Y RESONANCE BLOCK]

SEMICONDUCTORS

IC2101	AXF1145
IC2141	BA10393F
Q2141	2SC4081
D2101–2105	D1FL40

MISCELLANEOUS

L2101, 2102	ATH1155
L2103–2106	ATH1193

RESISTORS

R2101	(10 Ω, 1/2 W)	ACN1174
R2102		RS2MMF100J
R2103, 2107		RS1/10S104J
R2108		ACN1241
R2142, 2143		RS1/10S1003F
R2146, 2149		RS1/16S5601F
R2147, 2151		RS1/16S6801F
Other Resistors		RS1/16S###J

CAPACITORS

C2101, 2145		CKSRYB105K6R3
C2102		CKSYB105K25
C2103, 2107, 2108	(0.22 μF/250 V)	ACG1112
C2104, 2106	(470 pF/630 V)	ACG1126
C2109–2112	(3300 pF/630 V)	ACG1129
C2131–2134, 2136	(3.3 μF/250 V)	ACE1168
C2141, 2143, 2144		CKSSYB104K10

[42Y SUS BLOCK]

SEMICONDUCTORS

IC2203, 2221	TND307TD
IC2231, 2251	TND301S
IC2250	PS9117
IC2252, 2253	AXF1144
IC2350	MM1565AF
Q2202	2SA2142
Q2221	2SK3325
Q2250	2SC4081
Q2280, 2281	2SK3399
Q2290	2SK3050
D2202, 2204, 2205, 2234	CRH01
D2203, 2212, 2351	1SS355
D2211	D1FK60
D2213	1SS302
D2232, 2271	UDZS16(B)
D2233	1SS301
D2250	UDZS5R6(B)
D2251, 2252, 2272	CRH01

MISCELLANEOUS

L2350, 2351, 2354	(10 μH)	LFEA100J
L2353	(1.0 μH)	ATH1186
F2301–2320		ATX1062
F2352		CTF1449

Mark No.	Description	Part No.
	KN2350, 2352, 2354, 2356	ANK-142
	KN2357, 2359–2363	ANK-142
	CN2350	B9B-EH
	CN2351, 2352	B4B-PH
RESISTORS		
	R2203	RS3LMF152J
	R2210	RS1/10S151J
	R2211	RS1/10S561J
	R2222, 2224	RS2MMF5R6J
	R2277–2281	RS3LMF8R2J
	R2290	RS1MMF471J
	R2304 (10 Ω, 1/2 W)	ACN1174
	R2352 (2.2 Ω, 1/2 W)	ACN1166
	R2360, 2362 (22 Ω, 1/2 W)	ACN1178
	Other Resistors	RS1/16S###J
CAPACITORS		
	C2203–2206 (3300 pF/630 V)	ACG1129
	C2207	CCSRCH102J50
	C2208, 2221, 2339, 2364	CEHAT470M25
	C2209, 2222, 2230, 2252	CKSRYF104Z50
	C2226 (3.3 μF/400 V)	ACH1427
	C2231 (0.33 μF/100 V)	ACG1118
	C2250	CKSSYB104K10
	C2270 (270 μF/100 V)	ACH1426
	C2271, 2272 (0.1 μF/100 V)	ACG1124
	C2330, 2335, 2341, 2342 (2.2 μF/250 V)	ACE1178
	C2336, 2337 (280 μF/250 V)	ACH1424
	C2353, 2358, 2359	CKSRYB105K6R3
	C2354, 2360	CKSYB105K25
	C2355, 2369	CEHAT101M10
	C2356	CKSRYB104K16
	C2357	CEHAT470M16
	C2363	CKSRYB473K16

[42Y SCAN BLOCK]

SEMICONDUCTORS

	IC2401	PS9851-2(P)
	IC2402, 2407	TC74AC540FT
	IC2403, 2405, 2406, 2408	PS9117
	IC2409, 2410	PST3638UR
	D2402	CRH01
MISCELLANEOUS		
	L2401–2403 (10 μH)	LFEA100J
	F2401–2404	ATX1059
	CN2401, 2402	AKM1200
RESISTORS		
	R2407, 2421	RAB4C220J
	Other Resistors	RS1/16S###J
CAPACITORS		
	C2401, 2407, 2414	CEHAT101M10
	C2402, 2403, 2405	CKSSYB104K10
	C2404, 2411 (47 μF/160 V)	ACH1406
	C2408–2410, 2412	CKSSYB104K10
	C2416, 2417	CKSRYB102K50

Mark No.	Description	Part No.

[42Y VH D-D CON BLOCK]

SEMICONDUCTORS

	IC2502	MIP2E3DMC
	IC2503	PS2701A-1(L)
	IC2531	BA10358F
	IC2534, 2535	TA76431FR
	Q2511	HN1C01FU
	Q2531	2SC3425
	Q2532	2SD2568
	Q2533	2SC2412K
	D2522, 2524	CRH01
	D2523, 2532	D1FK60
	D2530, 2531	UDZS8R2(B)
	D2533	UDZS33(B)
	D2534	1SS355
	D2536	UDZS4R7(B)
MISCELLANEOUS		
	L2501	LFEA101J
	VR2503	CCP1390
	VR2531	CCP1392
	T2503	ATK1158
RESISTORS		
	R2533, 2556	RS1/10S104J
	R2534, 2535, 2541	RS1/10S2203F
	R2542, 2545	RS1/16S5601F
	R2548	RS1/16S1003F
	R2549, 2557	RS1/16S4702F
	R2550	RS1/16S1802F
	R2553	RAB4C472J
	R2558	RS1/10S0R0J
	Other Resistors	RS1/16S###J
CAPACITORS		
	C2513 (22 μF/250 V)	ACH1428
	C2514, 2525, 2534	CKSRYB104K16
	C2515	CEHAT101M25
	C2516 (100 μF/160 V)	ACH1360
	C2520	CEHAT101M16
	C2521, 2533, 2535	CKSRYB104K25
	C2528	CEHAT221M16
	C2531 (0.01 μF/400 V)	ACE1177
	C2532 (10 μF/400 V)	ACH1425
	C2536	CEHAT470M25

[42Y D-D CON BLOCK]

SEMICONDUCTORS

	IC2601, 2603, 2606	PS2701A-1(L)
	IC2602	BA10358F
	IC2605, 2614	TA76431FR
	Q2601, 2609	2SA1576A
	Q2602, 2613, 2641	HN1C01FU
	Q2603, 2604, 2611	DTC143EUA
	Q2605, 2606	2SD1898
	Q2607	2SC2713
	Q2608	2SA2005
	Q2610	2SA1163

Mark No.	Description	Part No.
	Q2612	2SC4081
	D2601, 2603, 2609, 2618	CRH01
	D2602, 2613–2615	1SS355
A	D2604, 2612	1SS301
	D2605	UDZS5R1(B)
	D2607, 2608	UDZS4R7(B)
	D2610	D1FL40
	D2611	1SS226
	D2616	UDZS5R6(B)
	D2617	UDZS15(B)

MISCELLANEOUS

	VR2601	CCP1390
	T2601	ATK1161
B	T2602	ATK1156

RESISTORS

	R2608, 2612, 2630, 2632	RS1/16S4701F
	R2613	RAB4C472J
	R2618	RS1/16S4702F
	R2625, 2626	RS1/16S1501F
	R2627	RS3LMF151J
	R2629	RS1/16S1002F
	R2635	RS1/16S4701F
	R2636	RS1/16S5601F
C	R2641, 2642	RS1/10S224J
	R2652	RS1/16S6801F
	Other Resistors	RS1/16S###J

CAPACITORS

	C2601, 2604, 2609	CKSRYB104K16
	C2602, 2615	CKSRYB105K6R3
	C2603	CKSRYF104Z50
	C2605, 2612, 2614	CKSRYB103K50
	C2606	CEHAT221M6R3
D	C2607	CKSRYB102K50
	C2608, 2610	CEHAT101M25
	C2611	CKSSYB104K10
	C2613	CEHAT221M25
	All Resistors	RS1/16S###J

42 ADDRESS ASSY

[42 ADR LOGIC]

SEMICONDUCTORS

E	IC1501	PEE002A

MISCELLANEOUS

	L1504	QTL1013
	CN1501	AKM1348
	CN1502	AKM1290

RESISTORS

	R1505–1509	RS1/16SS1000F
	R1530, 1531	RS1/16S0R0J
F	Other Resistors	RS1/16SS###J

CAPACITORS

	C1501	CKSRYB105K6R3
	C1502 (47 µF/6.3 V)	ACH1357
	C1503–1507, 1552–1555	CKSSYF104Z16
	C1509, 1510	CKSSYB102K50
	C1557	CCSSCH470J50

[42 ADR RESONANCE]

SEMICONDUCTORS

	IC1601, 1602	TND307TD
	Q1601, 1610	HAT3021R
	Q1602, 1609	HAT1110R
	Q1606, 1608, 1611	QSZ2
	Q1612	2SA1163
	Q1613, 1614	RN1901
	D1601, 1606, 1618, 1619	UDZS15(B)
	D1602, 1603, 1620, 1621	EC10UA20
	D1604, 1605, 1622, 1623	CRH01
	D1612	1SS302
	D1625, 1628	1SS355

MISCELLANEOUS

	L1601, 1604 (0.58 µH)	ATH1135

RESISTORS

	R1606, 1611, 1613	RS1/16SS330J
	R1607, 1619, 1621, 1636	RS1/16SS0R0J
	R1637	RS1/16SS0R0J
	Other Resistors	RS1/16S###J

CAPACITORS

	C1601, 1614 (0.1 µF/100 V)	ACG1124
	C1602–1605 (56 µF/80 V)	ACH1405
	C1609 (0.1 µF/100 V)	ACG1098
	C1613	CKSRYB104K25
	C1619	CKSYB105K16

42 SCAN A ASSY

SEMICONDUCTORS

	IC2701–2706	SN755870KPZT-P
	IC2707	TC7SH08FUS1
	D2701–2707	1SS355

MISCELLANEOUS

	CN2701	AKP1261
	CN2702	AKM1274

RESISTORS

	R2705, 2710, 2713, 2716	RAB4C221J
	R2719, 2722	RAB4C221J
	Other Resistors	RS1/16S###J

CAPACITORS

	C2701, 2711, 2721, 2731 (0.22 µF/250 V)	ACG1125
	C2703, 2713, 2723, 2733	CKSRYB105K6R3
	C2705–2707, 2715–2717	CCSRCH390J50
	C2708, 2709, 2718, 2719	CCSRCH331J50
	C2710, 2720, 2730, 2740	CCSRCH181J50
	C2725–2727, 2735–2737	CCSRCH390J50
	C2728, 2729, 2738, 2739	CCSRCH331J50

Mark No.	Description	Part No.
C2741, 2751	(0.22 µF/250 V)	ACG1125
C2743, 2753		CKSRYB105K6R3
C2745–2747, 2755–2757		CCSRCH390J50
C2748, 2749, 2758, 2759		CCSRCH331J50
C2750, 2760		CCSRCH181J50

42 SCAN B ASSY

SEMICONDUCTORS

IC2801–2806	SN755870KPZT-P
IC2807	TC7SH08FUS1
D2801–2807	1SS355

MISCELLANEOUS

CN2801	AKP1261
CN2802	AKM1274

RESISTORS

R2803, 2808, 2811, 2814	RAB4C221J
R2817, 2820	RAB4C221J
Other Resistors	RS1/16S###J

CAPACITORS

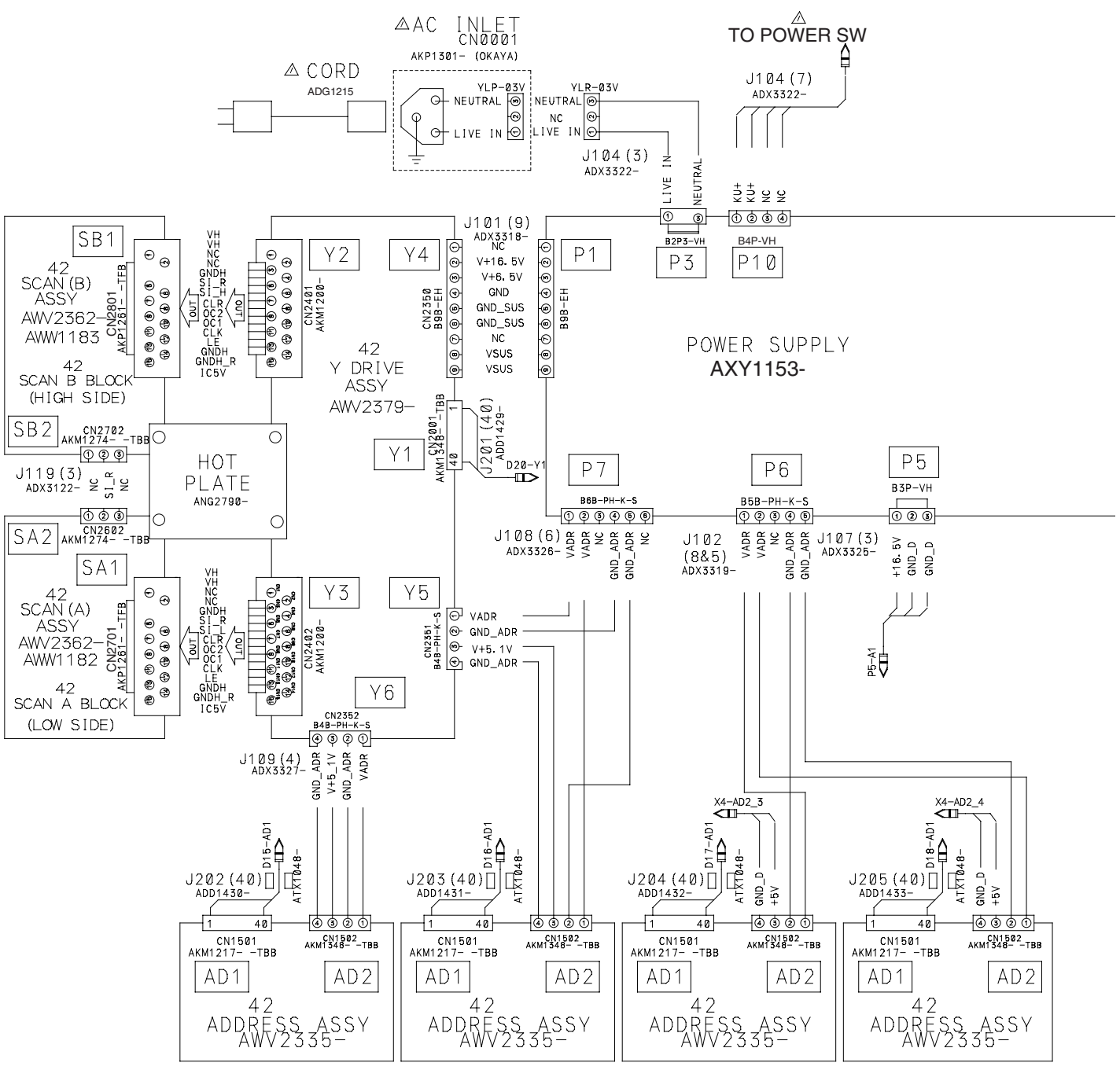
C2801, 2811, 2821, 2831	(0.22 µF/250 V)	ACG1125
C2803, 2813, 2823, 2833		CKSRYB105K6R3
C2805–2807, 2815–2817		CCSRCH390J50
C2808, 2809, 2818, 2819		CCSRCH331J50
C2810, 2820, 2830, 2840		CCSRCH181J50
C2825–2827, 2835–2837		CCSRCH390J50
C2828, 2829, 2838, 2839		CCSRCH331J50
C2841, 2851	(0.22 µF/250 V)	ACG1125
C2843, 2853, 2861		CKSRYB105K6R3
C2845–2847, 2855–2857		CCSRCH390J50
C2848, 2849, 2858, 2859		CCSRCH331J50
C2850, 2860		CCSRCH181J50

POWER SUPPLY UNIT

POWER SUPPLY UNIT has no service part.

4. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

4.1 OVERALL CONNECTION DIAGRAM (1/2)



CONNECTOR PIN ASIGN

CN3001 D11 →CN4001 M1

1. GND	26. VIDEO_G6
2. V+3.3V_UCOM	27. VIDEO_G5
3. INP_MUTE	28. VIDEO_G4
4. THEATER	29. VIDEO_G3
5. VD	30. VIDEO_G2
6. HD	31. VIDEO_G1
7. DE	32. VIDEO_G0
8. GND	33. GND
9. CLK	34. VIDEO_B9
10. GND	35. VIDEO_B8
11. GND	36. VIDEO_B7
12. VIDEO_R9	37. VIDEO_B6
13. VIDEO_R8	38. VIDEO_B5
14. VIDEO_R7	39. VIDEO_B4
15. VIDEO_R6	40. VIDEO_B3
16. VIDEO_R5	41. VIDEO_B2
17. VIDEO_R4	42. VIDEO_B1
18. VIDEO_R3	43. VIDEO_B0
19. VIDEO_R2	44. GND
20. VIDEO_R1	45. RESERVE (N.C.)
21. VIDEO_R0	46. AC_OFF (N.C.)
22. GND	47. TXD_MD
23. VIDEO_G9	48. RXD_MD
24. VIDEO_G8	49. REQ_MD
25. VIDEO_G7	50. MODE

CN1501 AD1 →CN1351 D15
CN1501 AD1 →CN1352 D16
CN1501 AD1 →CN1353 D17
CN1501 AD1 →CN1354 D18

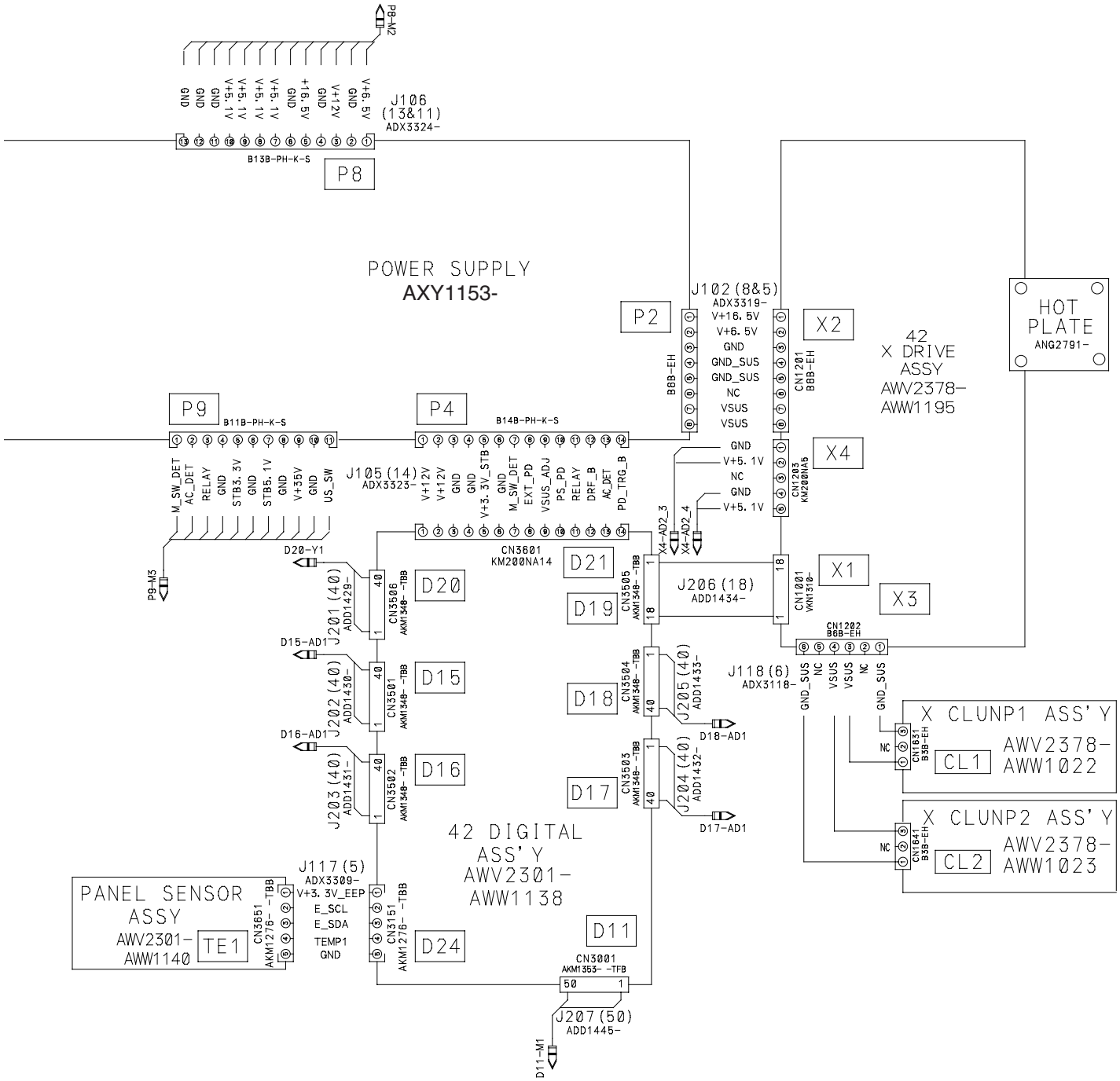
1 →40. GND	21→20. CN
2 →39. DIV0	22→19. NC
3 →38. DIV1	23→18. GND_LVDS
4 →37. GND	24→17. NC
5 →36. V+3.3V	25→16. BP
6 →35. V+3.3V	26→15. BN
7 →34. GND	27→14. NC
8 →33. GND_LVDS	28→13. GND_LVDS
9 →32. NC	29→12. NC
10→31. TDP	30→11. AP
11→30. TDN	31→10. AN
12→29. NC	32→9. NC
13→28. GND_LVDS	33→8. GND_LVDS
14→27. NC	34→7. GND
15→26. CLKP	35→6. V+8V
16→25. CLKN	36→5. V+8V
17→24. NC	37→4. GND
18→23. GND_LVDS	38→3. PSIZE
19→22. NC	39→2. ADR_PD
20→21. CP	40→1. NC

CN3506 D20 →CN2001 Y1

1→40. YCN_PD	21→20. GND
2→39. SCN5V_PD	22→19. YSUS_MSK
3→38. SI_L	23→18. YNRST
4→37. SI_H	24→17. YRsv2
5→36. GND	25→16. GND
6→35. CLR	26→15. YNOFS
7→34. CLK1	27→14. YRsv3
8→33. GND	28→13. YSOFT-D
9→32. LE	29→12. GND
10→31. OC2	30→11. VOFS_ADJ
11→30. OC1	31→10. VYPRST_ADJ
12→29. GND	32→ 9. GND
13→28. SUS_B	33→ 8. GND
14→27. SUS_U	34→ 7. GND
15→26. GND	35→ 6. GND
16→25. SUS_D	36→ 5. YDD_PD
17→24. YSUS_G	37→ 4. YSUS_PD
18→23. GND	38→ 3. SCAN_PD
19→22. YPR-U	39→ 2. YDRV_PD
20→21. SUS_MUTE	40→ 1. PSW2

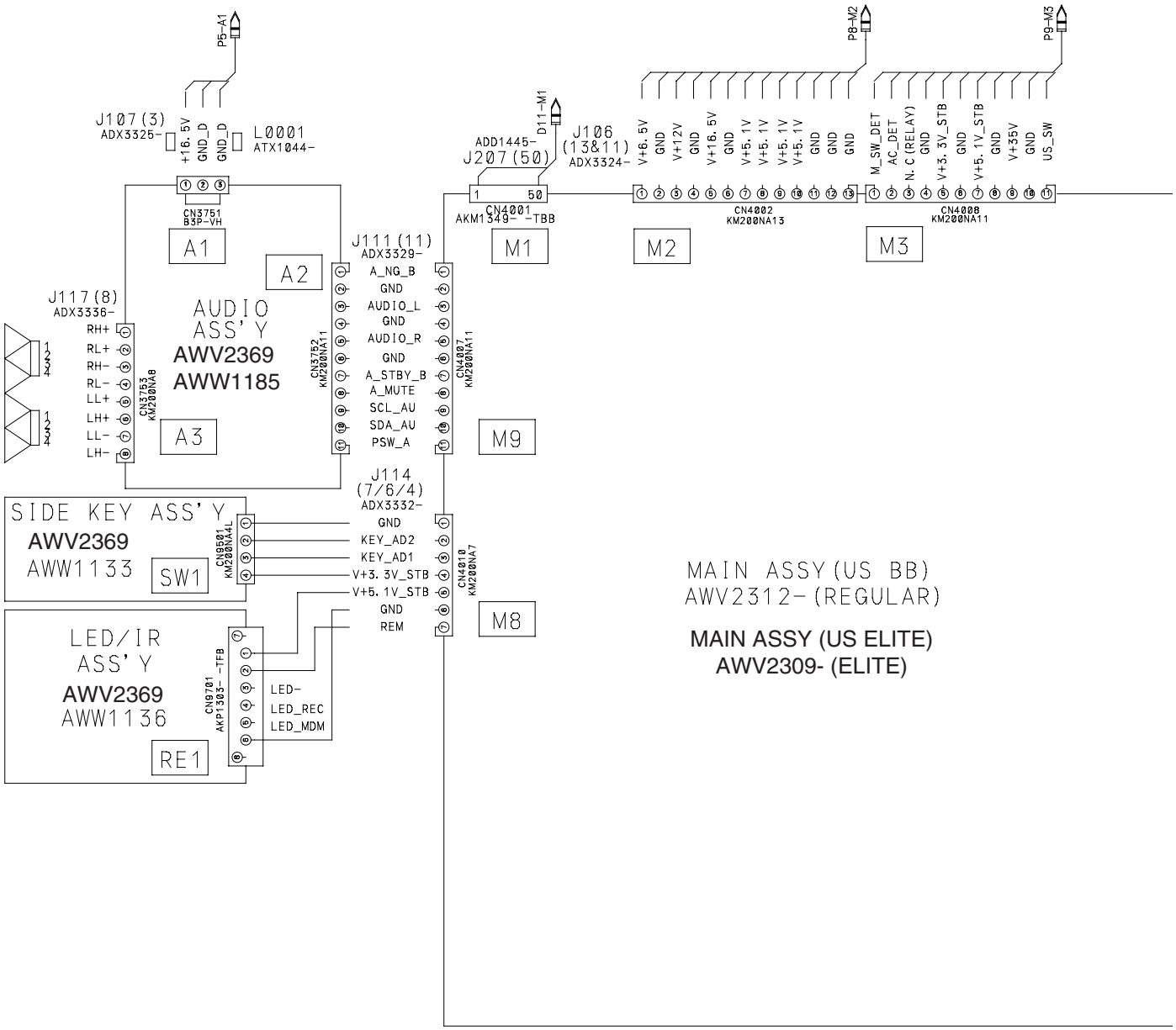
CN3505 D19 →CN1001 X1

1→18. PSW2	
2→17. XSUS_PD	
3→16. XDD_PD	
4→15. XDRV_PD	
5→14. GND	
6→13. SUS_MUTE	
7→12. XSUS_MSK	
8→11. GND	
9→10. XNR_D	
10→ 9. GND	
11→ 8. XSUS_G	
12→ 7. GND	
13→ 6. XSUS_D	
14→ 5. GND	
15→ 4. XSUS_U	
16→ 3. GND	
17→ 2. XSUS_B	
18→ 1. XCN_PD	



- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

4.2 OVERALL CONNECTION DIAGRAM (2/2)



CN4013 M10 → CN9003 C3

1. PC_H	
2. PC_V	
3. GND	
4. PC_B	
5. GND	
6. PC_G	
7. GND	
8. PC_R	
9. GND	
10. +5V_A	
11. GND	
12. V+9V_A	

CONNECTOR PIN ASIGN

CN3001 D11 →CN4001 M1

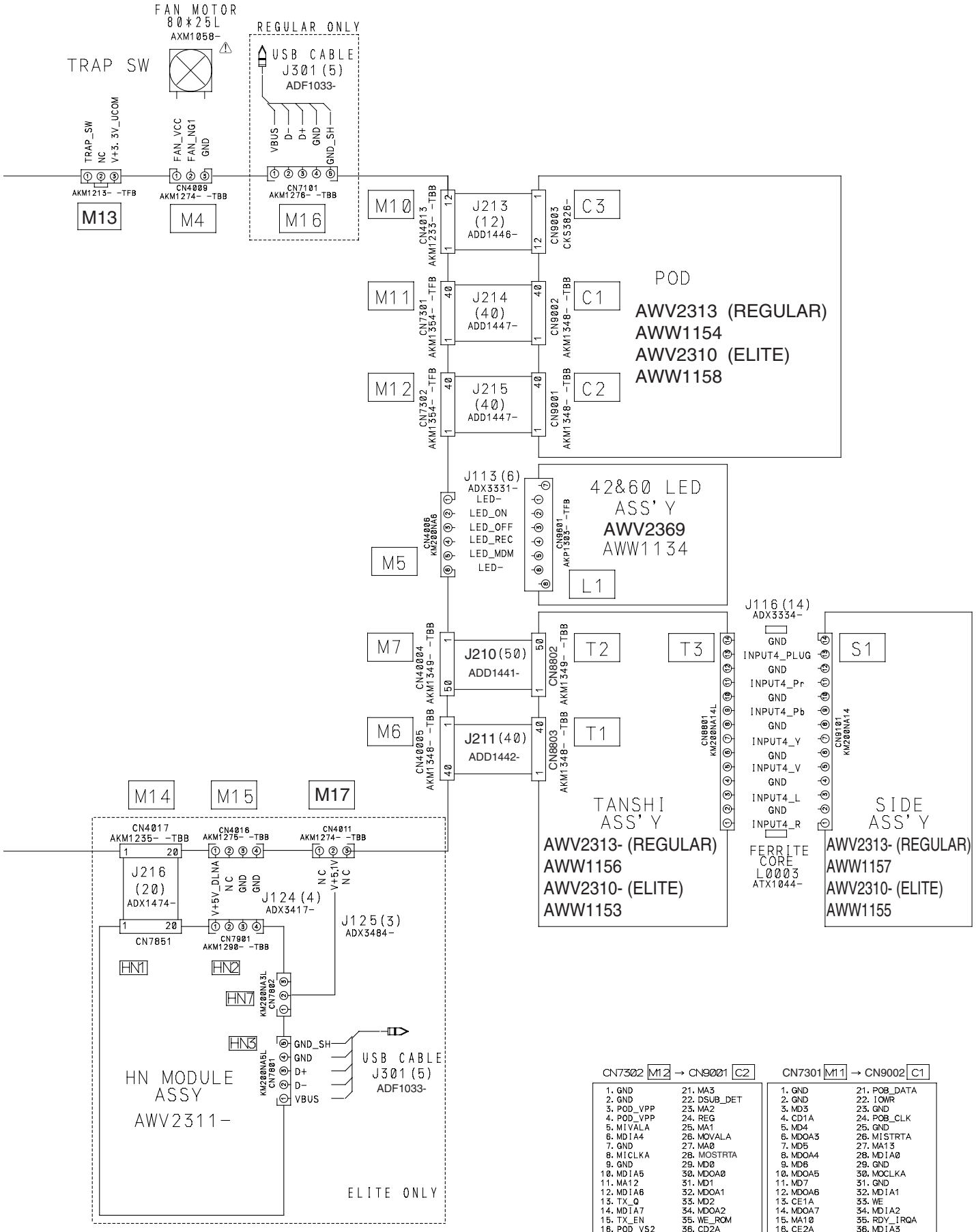
1. GND	26. VIDEO_G6
2. V+3.3V_UCOM	27. VIDEO_G5
3. INP_MUTE	28. VIDEO_G4
4. THEATER	29. VIDEO_G3
5. VD	30. VIDEO_G2
6. HD	31. VIDEO_G1
7. DE	32. VIDEO_G0
8. GND	33. GND
9. CLK	34. VIDEO_B9
10. GND	35. VIDEO_B8
11. GND	36. VIDEO_B7
12. VIDEO_R9	37. VIDEO_B6
13. VIDEO_R8	38. VIDEO_B5
14. VIDEO_R7	39. VIDEO_B4
15. VIDEO_R6	40. VIDEO_B3
16. VIDEO_R5	41. VIDEO_B2
17. VIDEO_R4	42. VIDEO_B1
18. VIDEO_R3	43. VIDEO_B0
19. VIDEO_R2	44. GND
20. VIDEO_R1	45. RESERVE(N.C)
21. VIDEO_R0	46. AC_OFF(N.C)
22. GND	47. TXD_MD
23. VIDEO_G9	48. RXD_MD
24. VIDEO_G8	49. REQ_MD
25. VIDEO_G7	50. MODE

CN4004 M7 → CN8802 T2

1→50. V+3.3V_UCOM	26→25. INPUT3_R
2→49. V+9V_A	27→24. GND
3→48. V+9V_A	28→23. INPUT3_L
4→47. TEMP_2	29→22. GND
5→46. GND	30→21. INPUT5_R
6→45. GND	31→20. GND
7→44. GND	32→19. INPUT5_L
8→43. GND	33→18. GND
9→42. GND	34→17. INPUT6_R
10→41. GND	35→16. GND
11→40. GND	36→15. INPUT6_L
12→39. INPUT2_SY	37→14. GND
13→38. INPUT2_SPLUG	38→13. INPUT3_Y
14→37. INPUT2_S2	39→12. GND
15→36. INPUT2_SC	40→11. INPUT3_PB
16→35. GND	41→10. GND
17→34. INPUT2_V	42→ 9. INPUT3_PR
18→33. GND	43→ 8. GND
19→32. INPUT1_SY	44→ 7. INPUT2_PLUG
20→31. INPUT1_SPLUG	45→ 6. GND
21→30. INPUT1_S2	46→ 5. INPUT2_Y
22→29. INPUT1_SC	47→ 4. GND
23→28. GND	48→ 3. INPUT2_PB
24→27. INPUT1_V	49→ 2. GND
25→26. GND	50→ 1. INPUT2_PR

CN4005 M6 →CN8803 T1

1. INPUT4_R	21. RXD_SR4
2. GND	22. TXD_SR4
3. INPUT4_L	23. SR_IN
4. GND	24. REM_B
5. INPUT4_V	25. GND
6. GND	26. MON_OUT_R
7. INPUT4_PR	27. GND
8. GND	28. MON_OUT_L
9. INPUT4_PB	29. GND
10. GND	30. SW_OUT
11. INPUT4_Y	31. GND
12. GND	32. INPUT2_R
13. INPUT4_PLUG	33. GND
14. V+5V_A	34. INPUT2_L
15. GND	35. GND
16. GND	36. INPUT1_R
17. PC_Rch	37. GND
18. GND	38. INPUT1_L
19. PC_Lch	39. GND
20. GND	40. MON_OUT_V



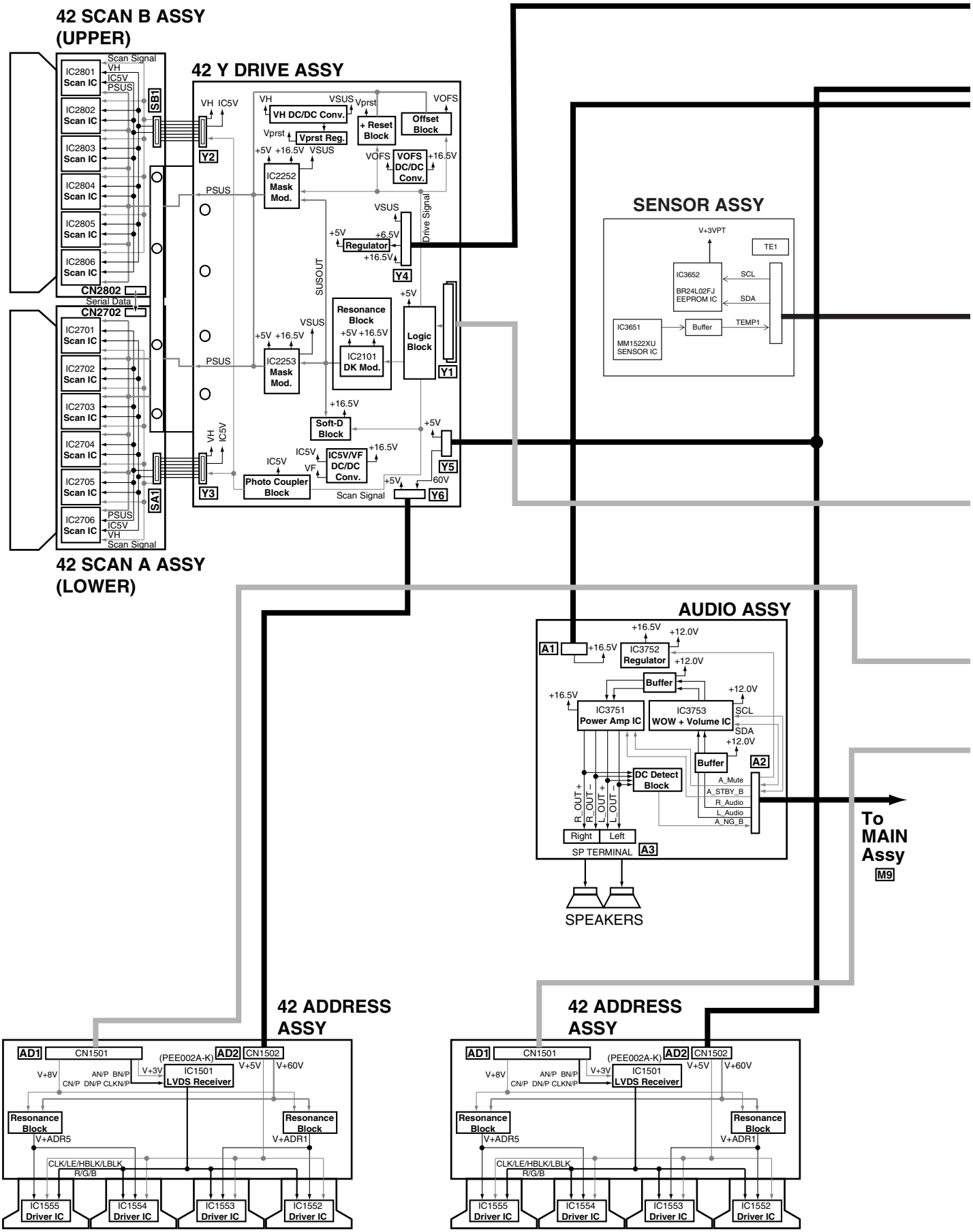
CN7302 M12 → CN9001 C2

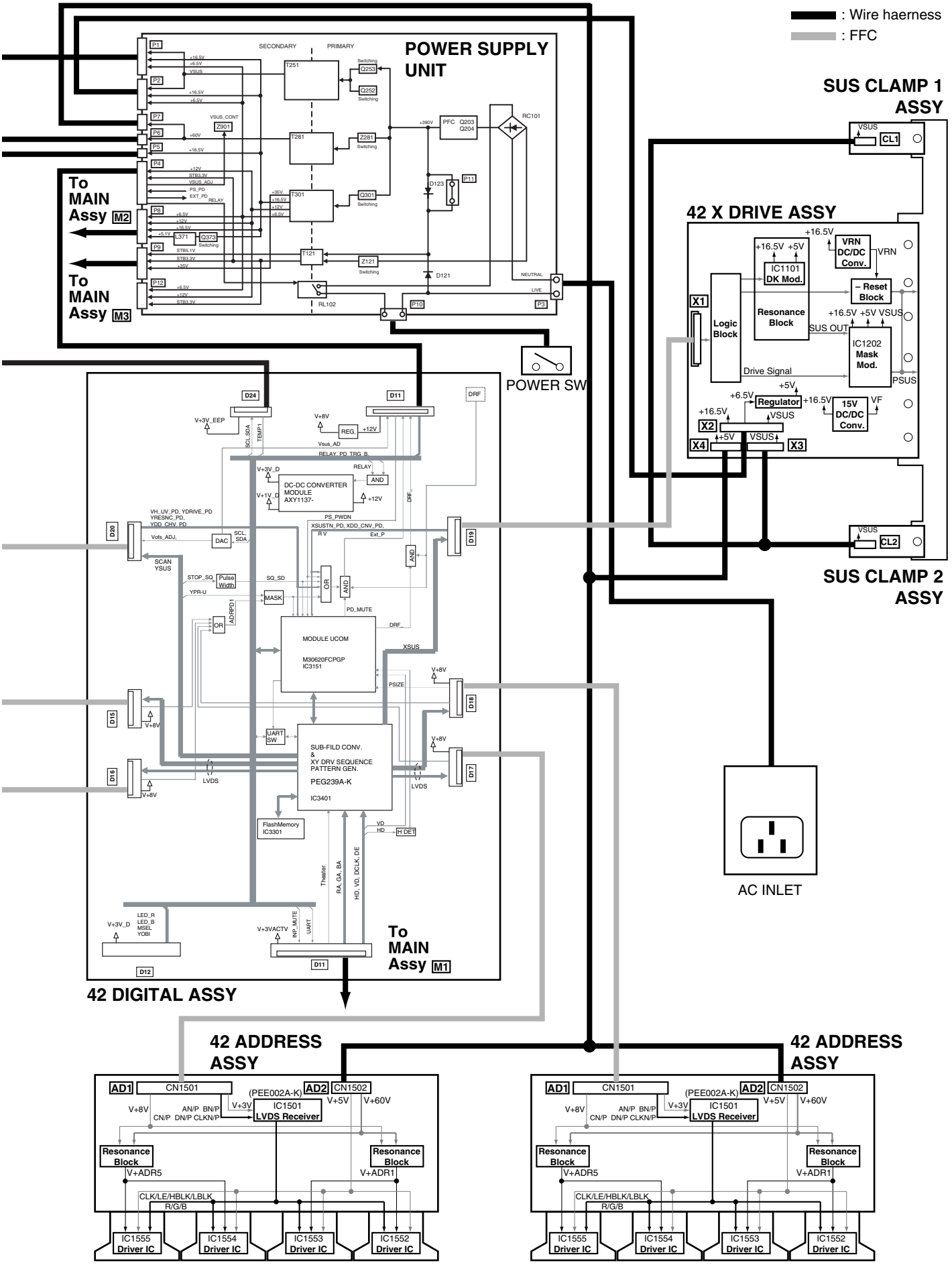
1. GND	21. MA3
2. GND	22. DSUB_DET
3. POD_VPP	23. MA2
4. POD_VPP	24. REG
5. MIVALA	25. MA1
6. MDIA4	26. MOVALA
7. GND	27. MA0
8. MICLKA	28. MOSTRTA
9. GND	29. MD0
10. MDIA5	30. MDOA0
11. MA12	31. MD1
12. MDIA6	32. MDOA1
13. TX_Q	33. MD2
14. MDIA7	34. MDOA2
15. TX_EN	35. WE_ROM
16. POD_VS2	36. CD2A
17. YX_I	37. GND
18. RSTA	38. V+3_3V_UCOM
19. OOB_EN	39. TEMP_2_P
20. WAITA	40. GND

CN7301 M11 → CN9002 C1

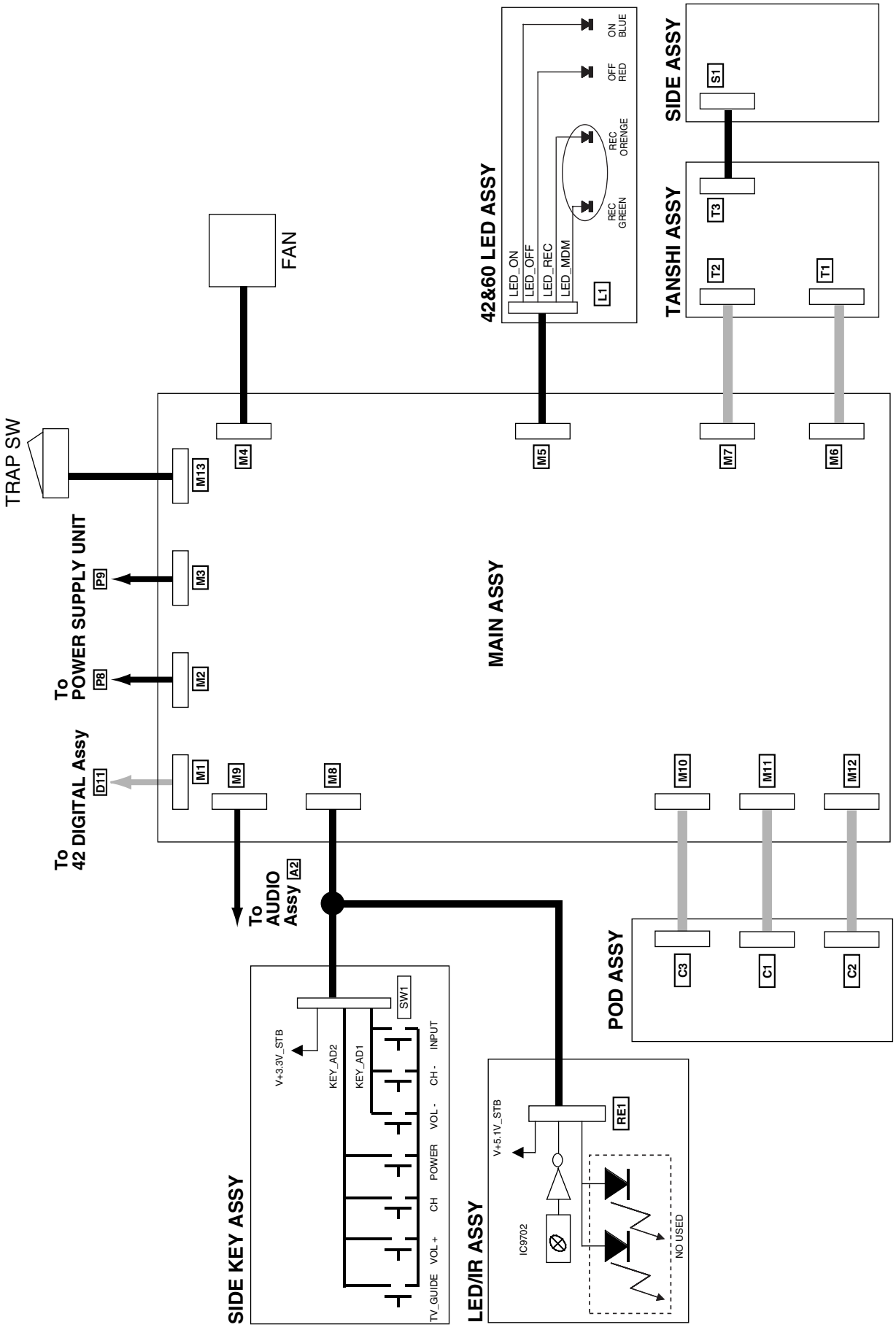
1. GND	21. POB_DATA
2. GND	22. IOWR
3. MD5	23. GND
4. CD1A	24. POB_CLK
5. MD4	25. GND
6. MDOA3	26. MISTRTA
7. MD5	27. MA13
8. MDOA4	28. MDIA0
9. MD6	29. GND
10. MDOA5	30. MOCLKA
11. MD7	31. GND
12. MDOA6	32. MDIA1
13. CE1A	33. WE
14. MDOA7	34. MDIA2
15. MA10	35. RDY_IRQA
16. CE2A	36. MDIA3
17. OE	37. POD_VCC
18. POD_VS1	38. POD_VCC
19. MA11	39. POD_VCC
20. IORD	40. GND

4.3 OVERALL BLOCK DIAGRAM (1/2)

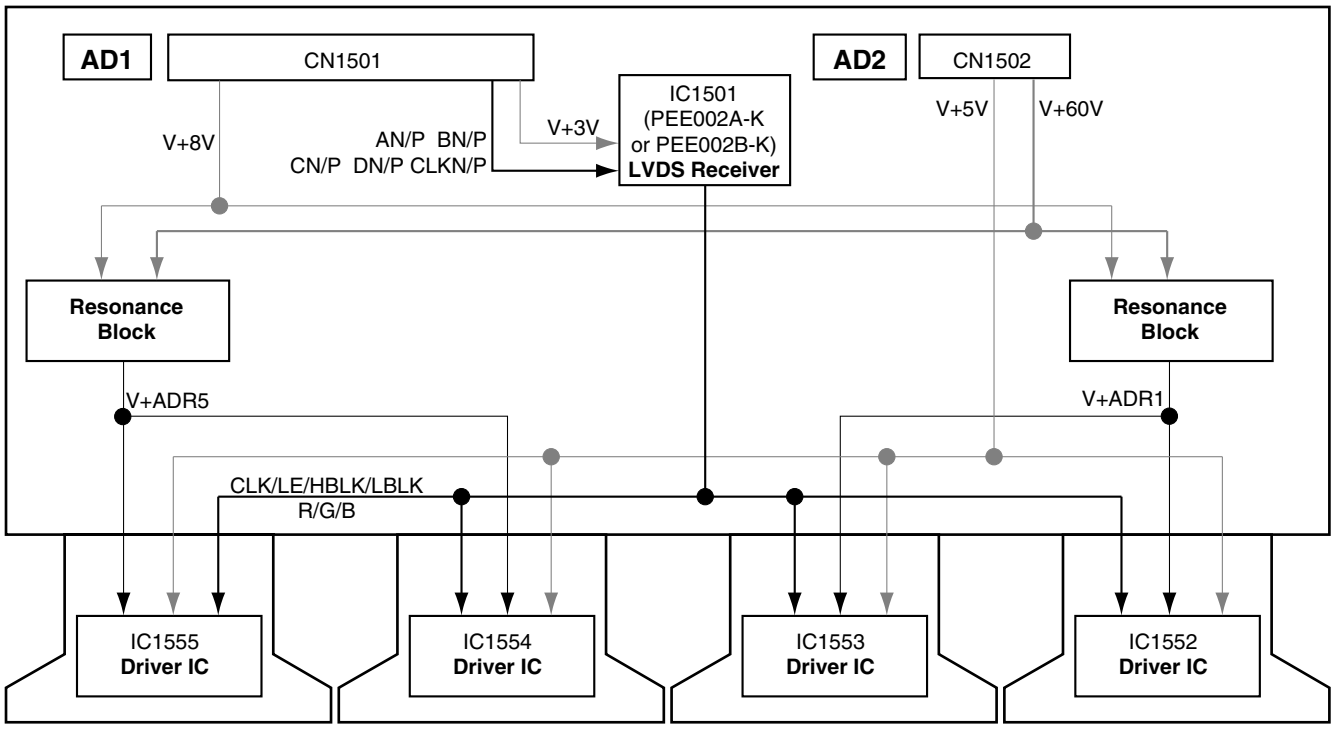



: Wire haerness
: FFC
POWER SUPPLY UNIT
SECONDARY
PRIMARY
To MAIN Assy M2
To MAIN Assy M3
POWER SW
SUS CLAMP 1 ASSY
SUS CLAMP 2 ASSY
42 X DRIVE ASSY
VRN DC/DC Conv.
IC1101 DK Mod.
– Reset Block
Logic Block
Resonance Block
IC1202 Mask Mod.
Drive Signal
Regulator
15V DC/DC Conv.
AC INLET
42 DIGITAL ASSY
DC-DC CONVERTER MODULE AXY1137-
MODULE UCOM
M30620FCPGP IC3151
SUB-FILD CONV. & XY DRV SEQUENCE PATTERN GEN.
PEG239A-K
IC3401
FlashMemory IC3301
To MAIN Assy M1
42 ADDRESS ASSY
42 ADDRESS ASSY
CN1501
CN1502
IC1501 LVDS Receiver
Resonance Block
IC1555 Driver IC
IC1554 Driver IC
IC1553 Driver IC
IC1552 Driver IC

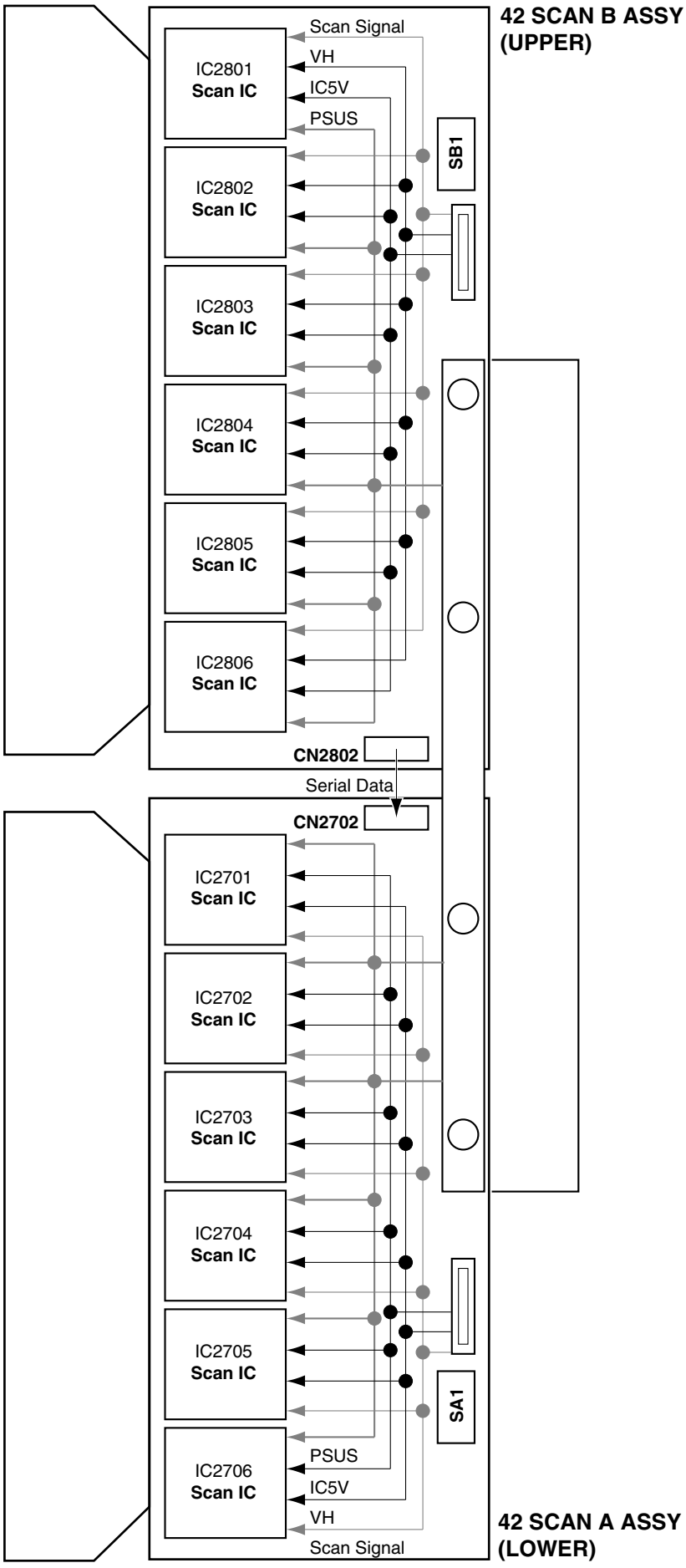
4.4 OVERALL BLOCK DIAGRAM (2/2)



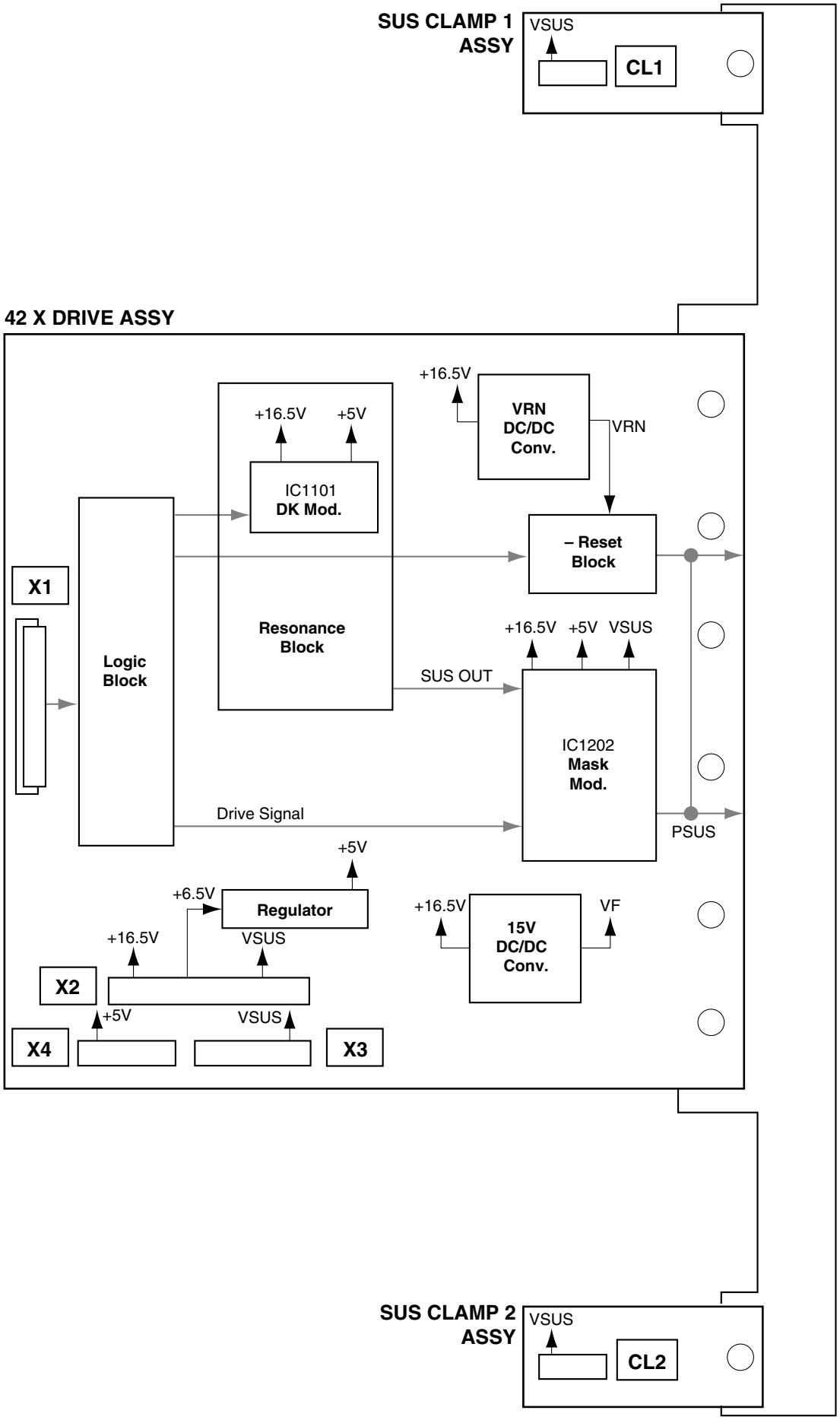
4.5 42 ADDRESS ASSY



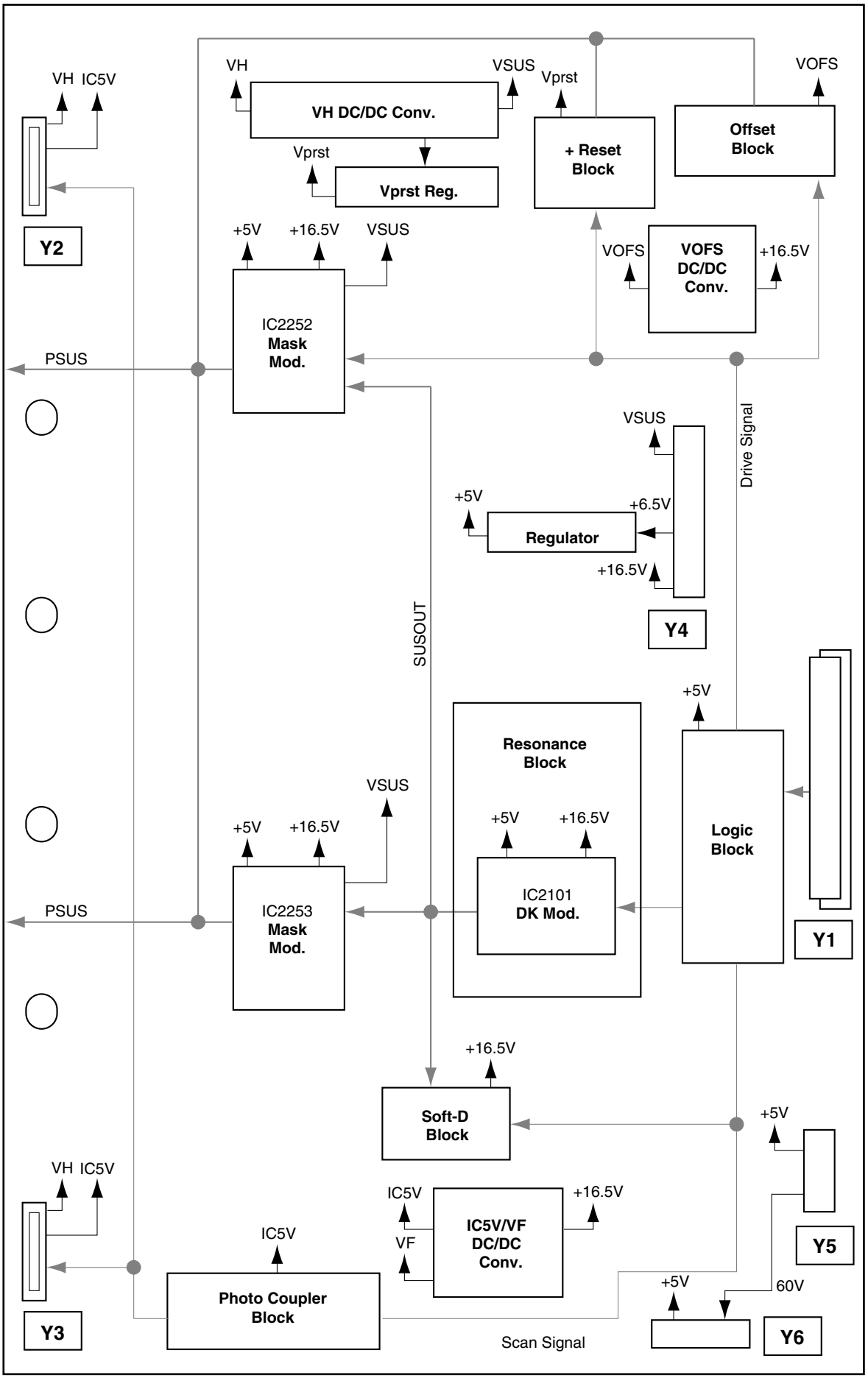
4.6 42 SCAN A and B ASSYS



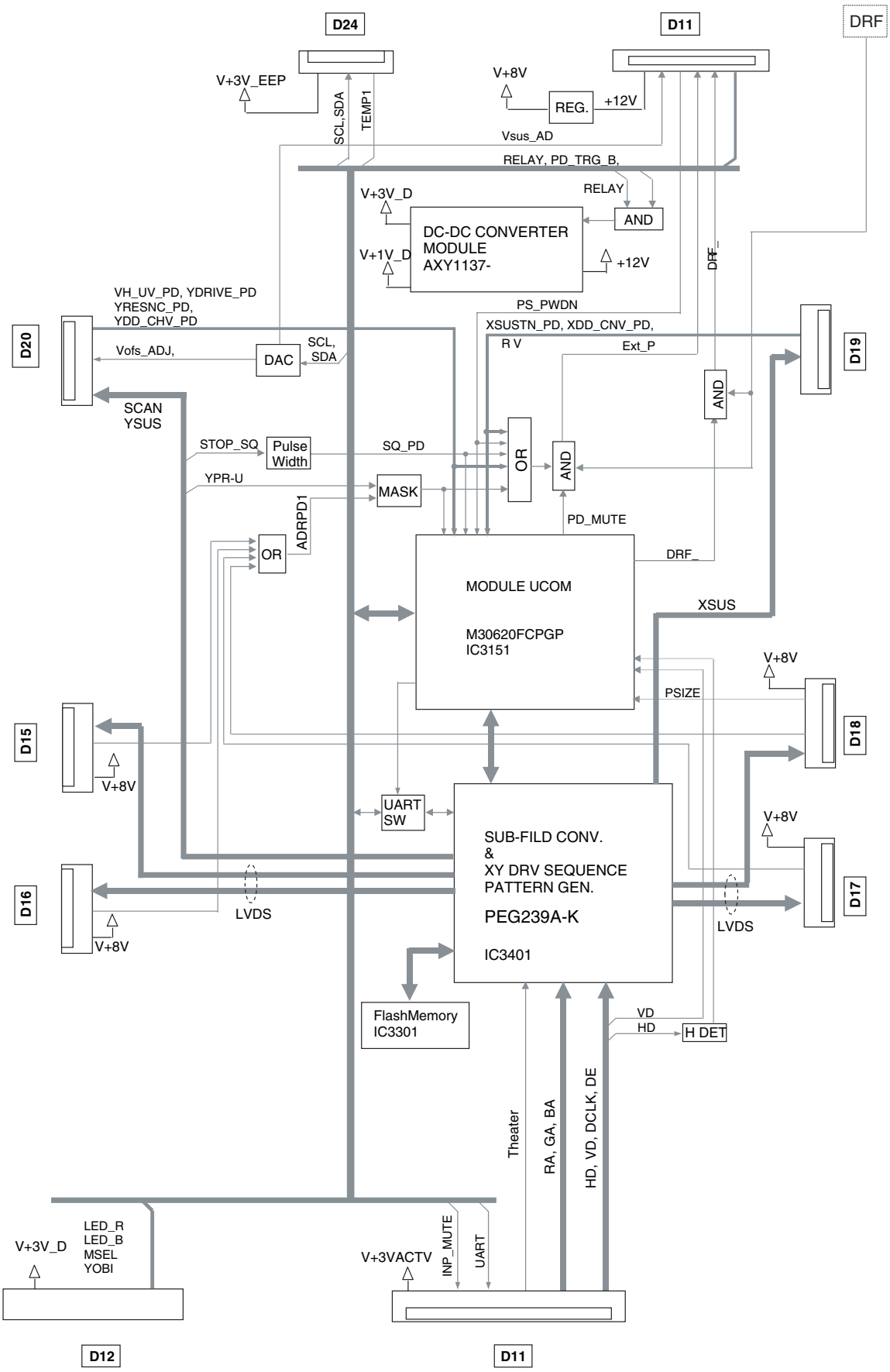
4.7 42X DRIVE, SUS CLAMP 1 and SUS CLAMP 2 ASSYS



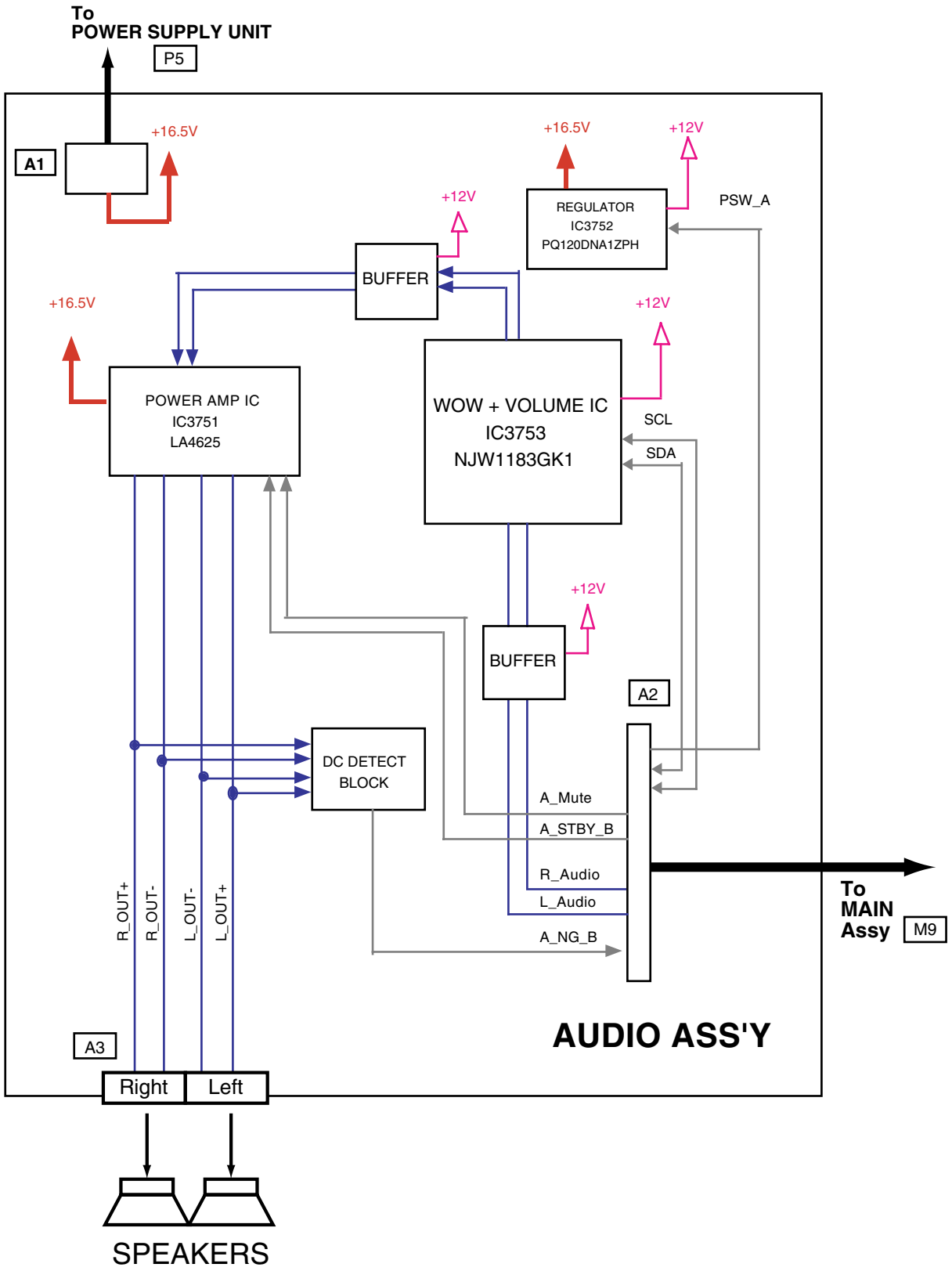
4.8 42 Y DRIVE ASSY



4.9 42 DIGITAL ASSY



4.10 AUDIO ASSY



A

B

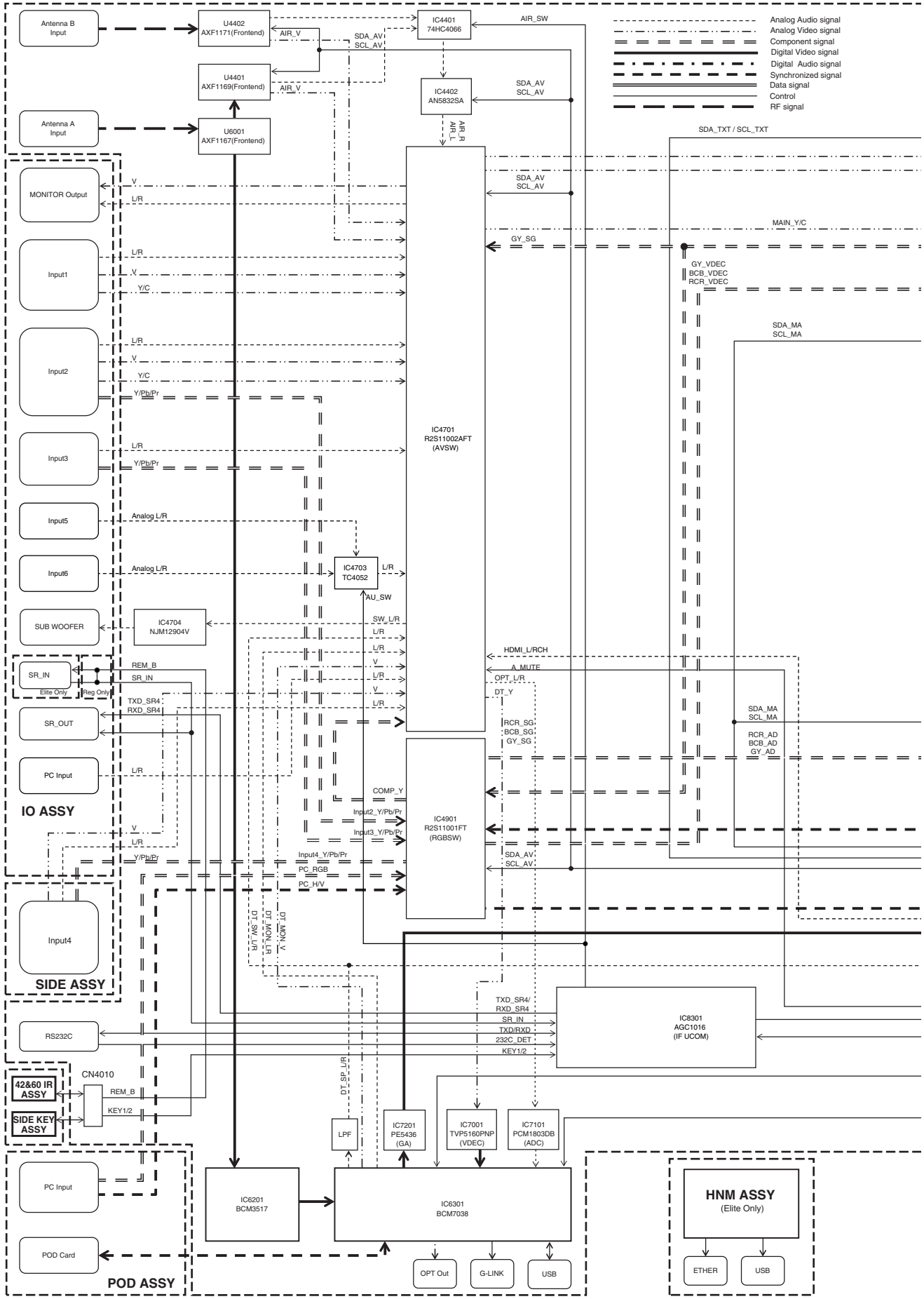
C

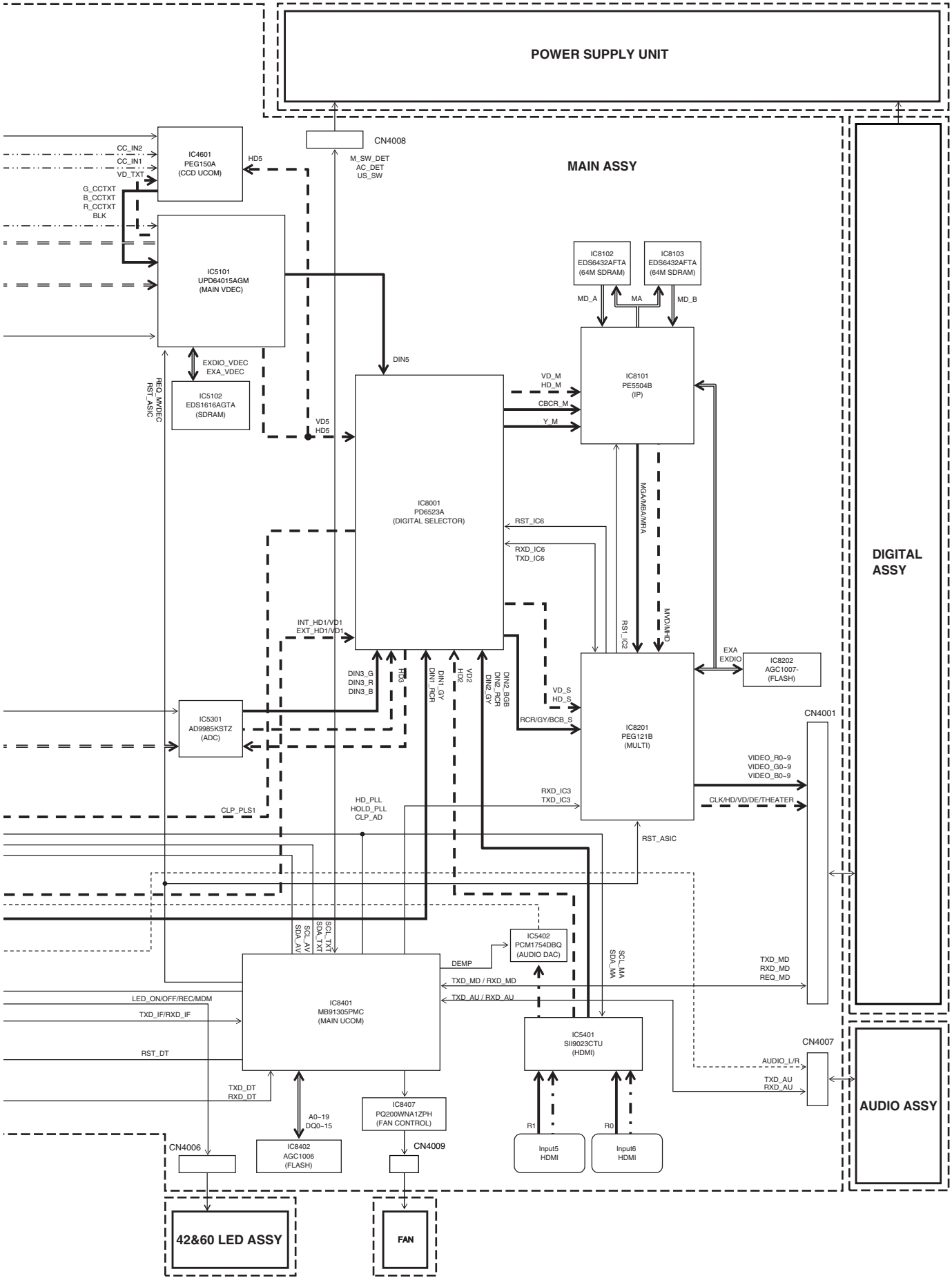
D

E

F

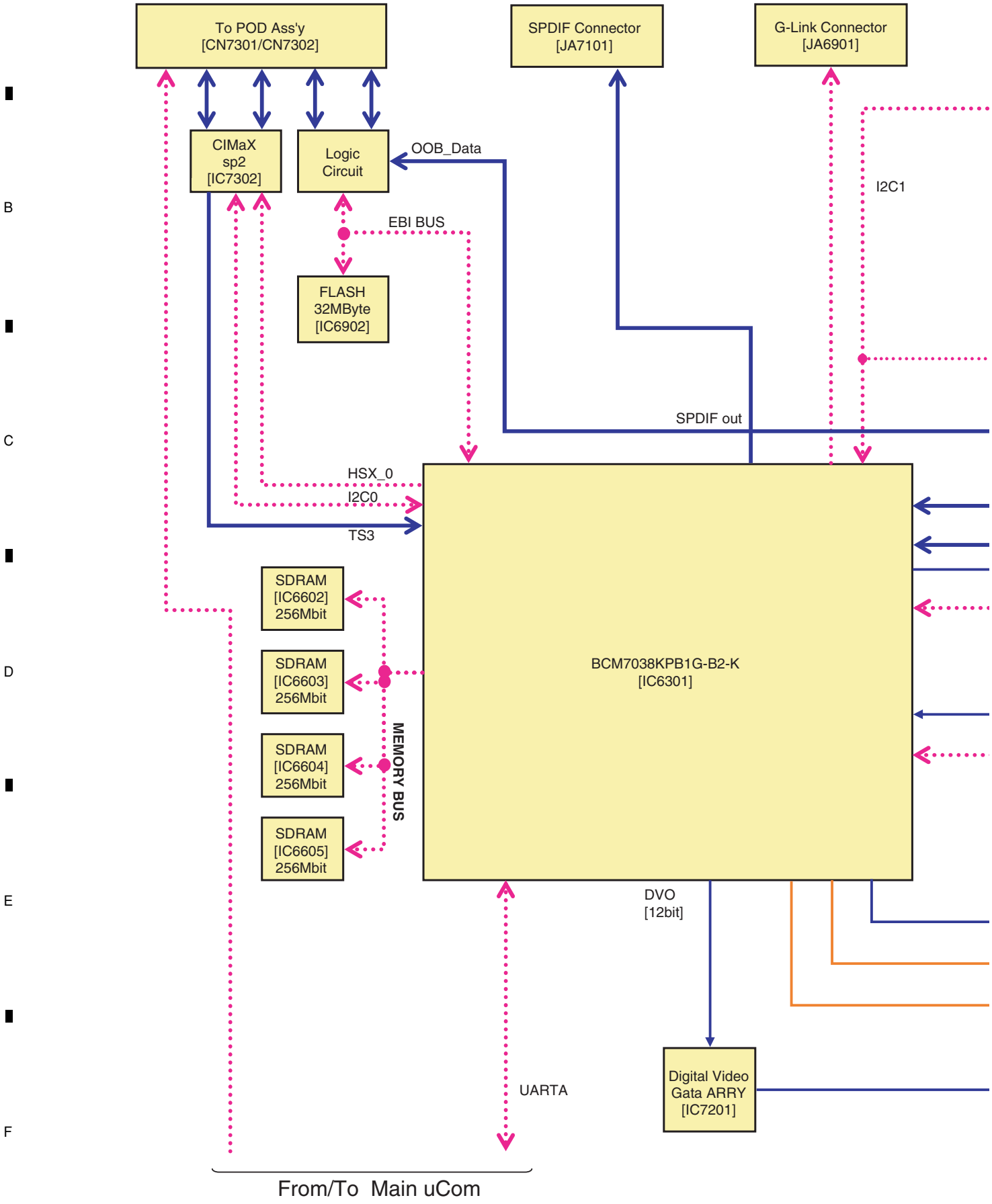
4.11 SIGNAL BLOCK DIAGRAM

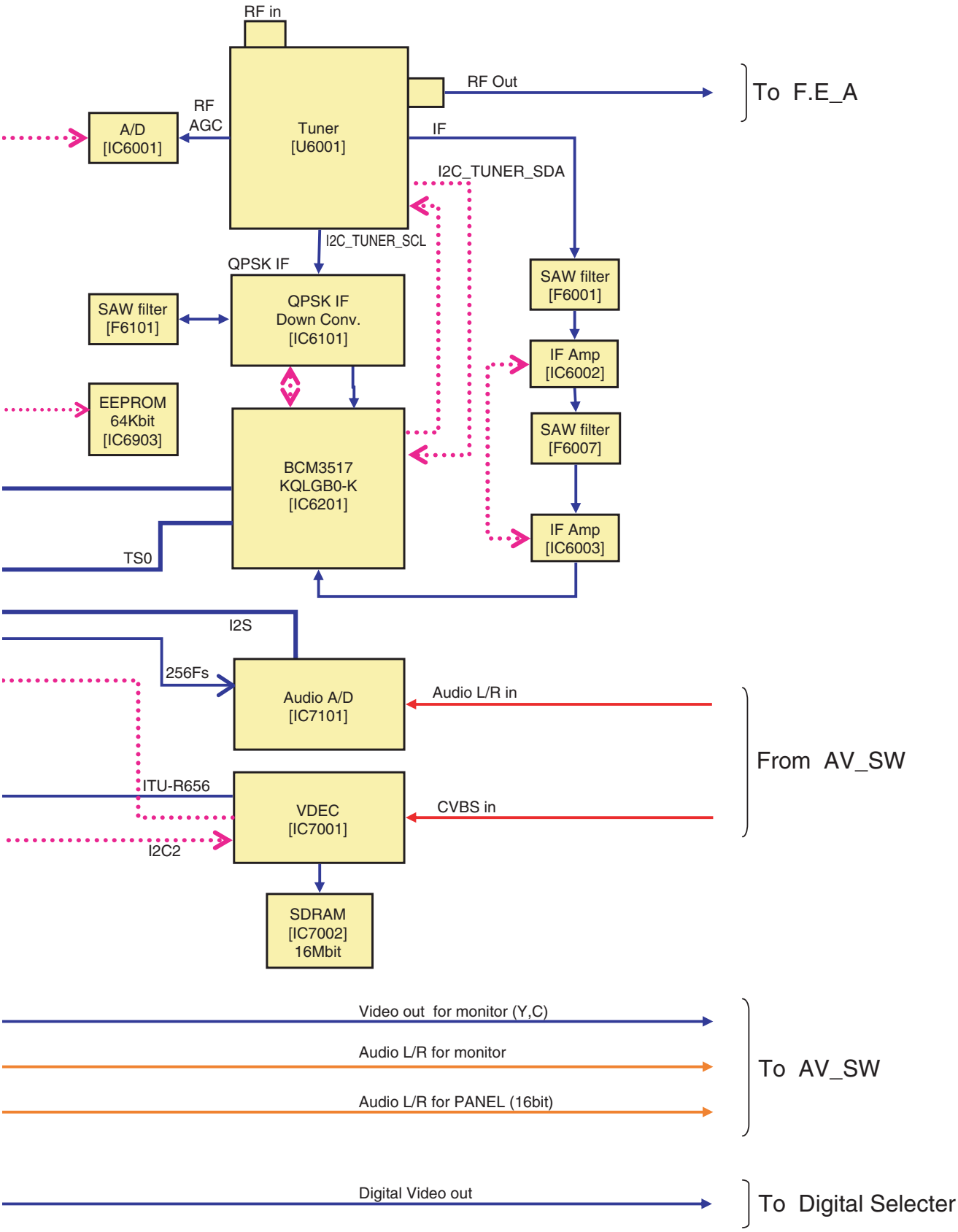



POWER SUPPLY UNIT
MAIN ASSY
DIGITAL ASSY
AUDIO ASSY
CN4008
M_SW_DET
AC_DET
US_SW
IC4601
PEG150A
(CCD UCOM)
HD5
CC_IN2
CC_IN1
VD_TXT
G_CCTXT
B_CCTXT
R_CCTXT
BLK
IC5101
UPD64015AGM
(MAIN VDEC)
EXDIO_VDEC
EXA_VDEC
IC5102
EDS1616AGTA
(SDRAM)
REQ_MVDEC
RST_ASIC
DIN5
VD5
HD5
IC8102
EDS6432AFTA
(64M SDRAM)
IC8103
EDS6432AFTA
(64M SDRAM)
MD_A
MA
MD_B
IC8101
PE5504B
(IP)
VD_M
HD_M
CBCR_M
Y_M
IC8001
PD6523A
(DIGITAL SELECTOR)
RST_IC6
RXD_IC6
TXD_IC6
MGA/MBA/MRA
RS1_IC2
MVD/MHD
EXA
EXDIO
IC8202
AGC1007-
(FLASH)
INT_HD1/VD1
EXT_HD1/VD1
DIN3_G
DIN3_R
DIN3_B
HD3
DIN1_GY
DIN1_RCR
VD2
HD2
DIN2_BGB
DIN2_RCR
DIN2_GY
VD_S
HD_S
RCR/GY/BCB_S
IC5301
AD9985KSTZ
(ADC)
IC8201
PEG121B
(MULTI)
CN4001
VIDEO_R0-9
VIDEO_G0-9
VIDEO_B0-9
CLK/HD/VD/DE/THEATER
RXD_IC3
TXD_IC3
CLP_PLS1
HD_PLL
HOLD_PLL
CLP_AD
RST_ASIC
SDA_AV
SCL_TXT
SDA_TXT
IC5402
PCM1754DBQ
(AUDIO DAC)
DEMP
SCL_MA
SDA_MA
TXD_MD
RXD_MD
REQ_MD
TXD_MD / RXD_MD
TXD_AU / RXD_AU
LED_ON/OFF/REC/MDM
TXD_IF/RXD_IF
RST_DT
IC8401
MB91305PMC
(MAIN UCOM)
IC5401
SII9023CTU
(HDMI)
CN4007
AUDIO_L/R
TXD_AU
RXD_AU
TXD_DT
RXD_DT
A0-19
DQ0-15
IC8407
PQ200WNA1ZPH
(FAN CONTROL)
R1
R0
Input5
HDMI
Input6
HDMI
CN4006
IC8402
AGC1006
(FLASH)
CN4009
42&60 LED ASSY
FAN

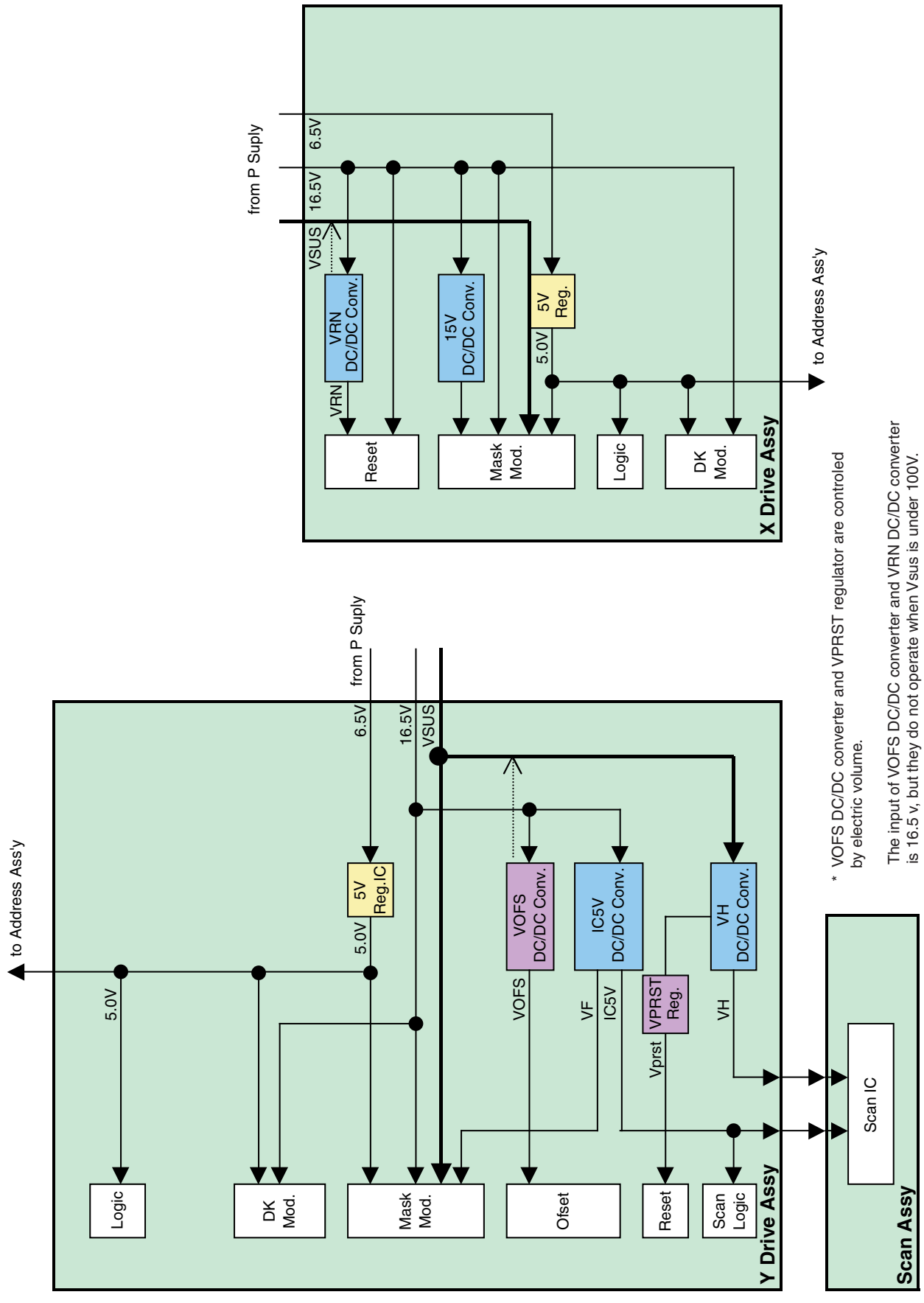
4.12 DTV BLOCK DIAGRAM

MTB American Digital Tuner Block R07SX (Block Diagram)

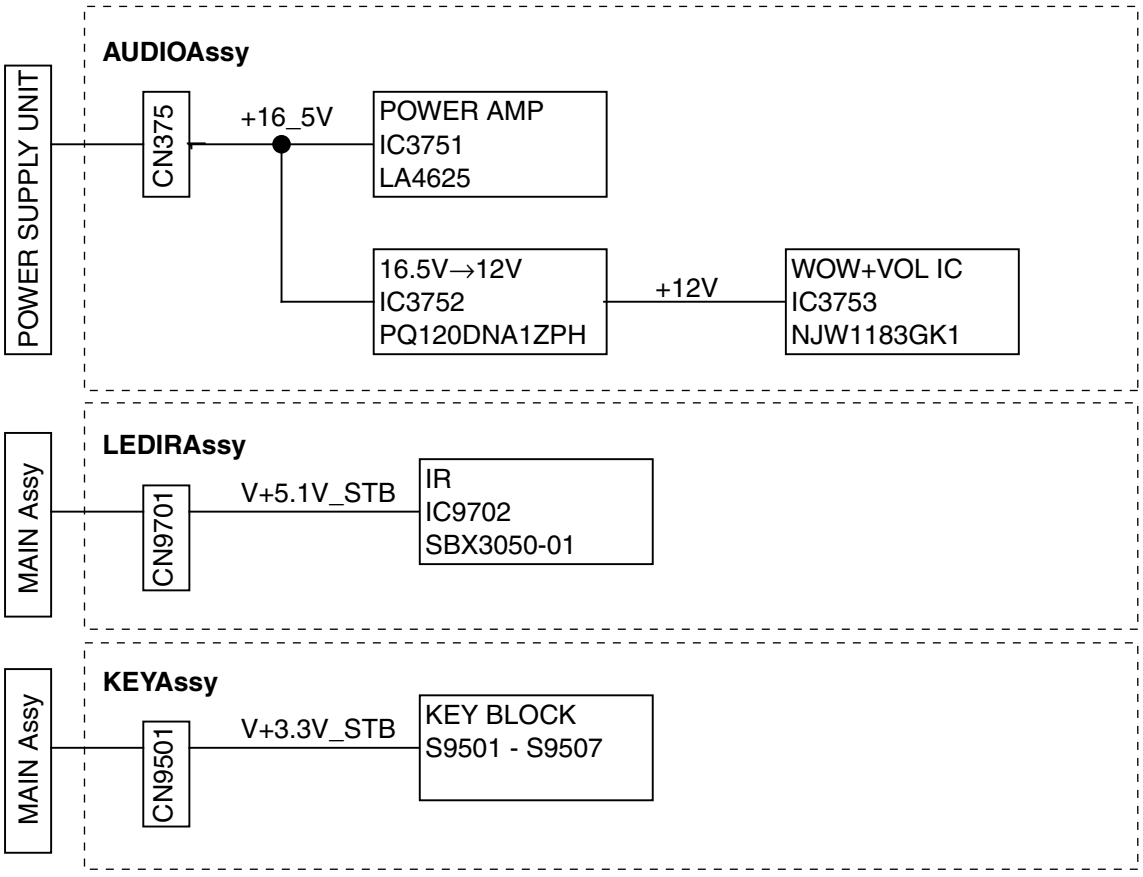



RF in
Tuner
[U6001]
RF Out
To F.E_A
RF
AGC
A/D
[IC6001]
IF
I2C_TUNER_SDA
I2C_TUNER_SCL
QPSK IF
QPSK IF
Down Conv.
[IC6101]
SAW filter
[F6101]
SAW filter
[F6001]
IF Amp
[IC6002]
SAW filter
[F6007]
IF Amp
[IC6003]
EEPROM
64Kbit
[IC6903]
BCM3517
KQLGB0-K
[IC6201]
TS0
I2S
256Fs
Audio A/D
[IC7101]
Audio L/R in
From AV_SW
ITU-R656
VDEC
[IC7001]
CVBS in
I2C2
SDRAM
[IC7002]
16Mbit
Video out for monitor (Y,C)
Audio L/R for monitor
Audio L/R for PANEL (16bit)
To AV_SW
Digital Video out
To Digital Selecter

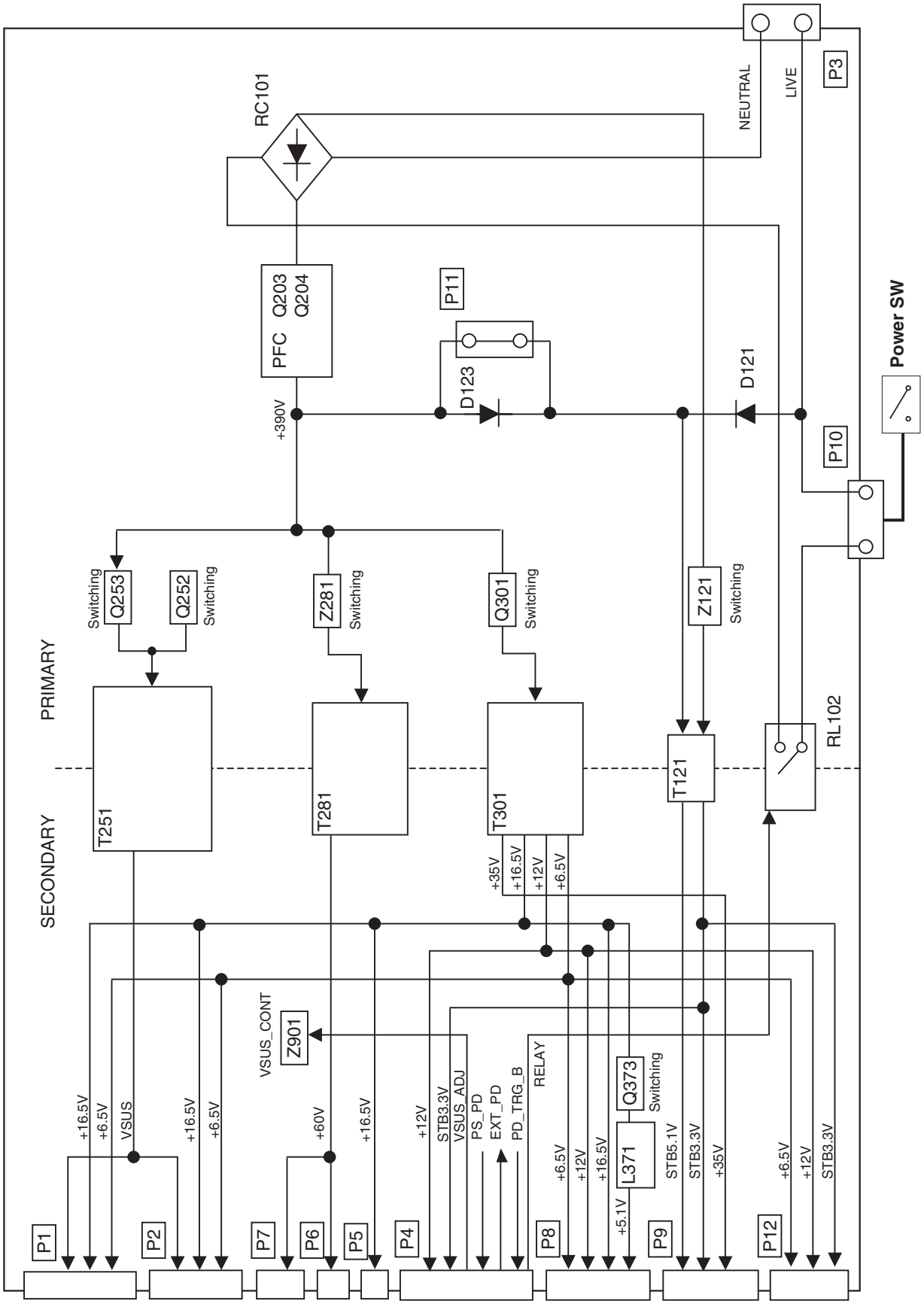
4.13 XY DRIVE POWER LINE BLOCK DIAGRAM



4.14 FUKUGO BLOCK POWER LINE BLOCK DIAGRAM



4.15 POWER SUPPLY UNIT



4.16 VOLTAGES

TANSHI Assy CN8802(AKM1349- -TBB)		Voltage	MTB MAIN Assy CN4004(AKM1349- -TBB)	
No.	Name	(V)	Name	No.
1	INPUT2_PR	2.5	INPUT2_PR	50
2	GND	0	GND	49
3	INPUT2_PB	2.5	INPUT2_PB	48
4	GND	0	GND	47
5	INPUT2_Y	2.5	INPUT2_Y	46
6	GND	0	GND	45
7	INPUT2_PLUG	2.5	INPUT2_PLUG	44
8	GND	0	GND	43
9	INPUT3_PR	2.5	INPUT3_PR	42
10	GND	0	GND	41
11	INPUT3_PB	2.5	INPUT3_PB	40
12	GND	0	GND	39
13	INPUT3_Y	2.5	INPUT3_Y	38
14	GND	0	GND	37
15	INPUT6_L	4.6	INPUT6_L	36
16	GND	0	GND	35
17	INPUT6_R	4.6	INPUT6_R	34
18	GND	0	GND	33
19	INPUT5_L	4.6	INPUT5_L	32
20	GND	0	GND	31
21	INPUT5_R	4.6	INPUT5_R	30
22	GND	0	GND	29
23	INPUT3_L	4.6	INPUT3_L	28
24	GND	0	GND	27
25	INPUT3_R	4.6	INPUT3_R	26
26	GND	0	GND	25
27	INPUT1_V	2.6	INPUT1_V	24
28	GND	0	GND	23
29	INPUT1_SC	2.1	INPUT1_SC	22
30	INPUT1_S2	0.2	INPUT1_S2	21
31	INPUT1_SPLUG	4.9	INPUT1_SPLUG	20
32	INPUT1_SY	2.6	INPUT1_SY	19
33	GND	0	GND	18
34	INPUT2_V	2.6	INPUT2_V	17
35	GND	0	GND	16
36	INPUT2_SC	2.1	INPUT2_SC	15
37	INPUT2_S2	0.2	INPUT2_S2	14
38	INPUT2_SPLUG	4.7	INPUT2_SPLUG	13
39	INPUT2_SY	2.3	INPUT2_SY	12
40	GND	0	GND	11
41	GND	0	GND	10
42	GND	0	GND	9
43	GND	0	GND	8
44	GND	0	GND	7
45	GND	0	GND	6
46	GND	0	GND	5
47	TEMP_2	2.2	TEMP_2	4
48	V+9V_A	9.2	V+9V_A	3
49	V+9V_A	9.2	V+9V_A	2
50	V+3.3V_UCOM	3.3	V+3.3V_UCOM	1

TANSHI Assy CN8803(AKM1348- -TBB)		Voltage	MTB MAIN Assy CN4005(AKM1348- -TBB)	
No.	Name	(V)	Name	No.
1	MON_OUT_V	1.5	MON_OUT_V	40
2	GND	0	GND	39
3	INPUT1_L	4.5	INPUT1_L	38
4	GND	0	GND	37
5	INPUT1_R	4.1	INPUT1_R	36
6	GND	0	GND	35
7	INPUT2_L	4.5	INPUT2_L	34
8	GND	0	GND	33
9	INPUT2_R	4.5	INPUT2_R	32
10	GND	0	GND	31
11	SW_OUT	0.5	SW_OUT	30
12	GND	0	GND	29
13	MON_OUT_L	0.7	MON_OUT_L	28
14	GND	0	GND	27
15	MON_OUT_R	1	MON_OUT_R	26
16	GND	0	GND	25
17	REM_B	4.8	REM_B	24
18	SR_IN	4.8	SR_IN	23
19	TXD_SR4	3.2	TXD_SR4	22
20	RXD_SR4	3.2	RXD_SR4	21
21	GND	0	GND	20
22	PC_LCH	4.6	PC_LCH	19
23	GND	0	GND	18
24	PC_RCH	4.6	PC_RCH	17
25	GND	0	GND	16
26	GND	0	GND	15
27	V+5V_A	4.9	V+5V_A	14
28	INPUT4_PLUG	4.9	INPUT4_PLUG	13
29	GND	0	GND	12
30	INPUT4_Y	2.5	INPUT4_Y	11
31	GND	0	GND	10
32	INPUT4_PB	2.5	INPUT4_PB	9
33	GND	0	GND	8
34	INPUT4_PR	2.5	INPUT4_PR	7
35	GND	0	GND	6
36	INPUT4_V	2.5	INPUT4_V	5
37	GND	0	GND	4
38	INPUT4_L	4.5	INPUT4_L	3
39	GND	0	GND	2
40	INPUT4_R	4.5	INPUT4_R	1

POD Assy — MTB MAIN Ass'y

CN9002(AKM1348 -TBB)		Voltage	CN7301(AKM1354- -TFB)	
No.	Name	(V)	Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	MD3	0	MD3	3
4	CD1A	3.3	CD1A	4
5	MD4	3.3	MD4	5
6	MDOA3	0	MDOA3	6
7	MD5	0	MD5	7
8	MDOA4	0	MDOA4	8
9	MD6	3.3	MD6	9
10	MDOA5	0	MDOA5	10
11	MD7	3.3	MD7	11
12	MDOA6	0	MDOA6	12
13	CE1A	3.3	CE1A	13
14	MDOA7	0	MDOA7	14
15	MA10	0	MA10	15
16	CE2A	3.3	CE2A	16
17	OE	3.3	OE	17
18	POD_VS1	3.3	POD_VS1	18
19	MA11	0	MA11	19
20	IORD	3.3	IORD	20
21	POB_DATA	0	POB_DATA	21
22	IOWR	3.3	IOWR	22
23	GND	0	GND	23
24	POB_CLK	3.3	POB_CLK	24
25	GND	0	GND	25
26	MISTRTA	0	MISTRTA	26
27	MA13	3.3	MA13	27
28	MDIA0	0	MDIA0	28
29	GND	0	GND	29
30	MOCLKA	0	MOCLKA	30
31	GND	0	GND	31
32	MDIA1	0	MDIA1	32
33	WE	3.3	WE	33
34	MDIA2	0	MDIA2	34
35	RDY/IRQA	3.3	RDY/IRQA	35
36	MDIA3	0	MDIA3	36
37	VCC	3.3	VCC	37
38	VCC	3.3	VCC	38
39	VCC	3.3	VCC	39
40	GND	0	GND	40

POD Assy — MTB MAIN Assy

CN9001(AKM1348 -TBB)		Voltage	CN7302(AKM1354- -TFB)	
No.	Name	(V)	Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	VPP	3.3	VPP	3
4	VPP	3.3	VPP	4
5	MIVALA	0	MIVALA	5
6	MDIA4	0	MDIA4	6
7	GND	0	GND	7
8	MICLKA	0	MICLKA	8
9	GND	0	GND	9
10	MDIA5	0	MDIA5	10
11	MA12	0	MA12	11
12	MDIA6	0	MDIA6	12
13	TX_Q	0	TX_Q	13
14	MDIA7	0	MDIA7	14
15	TX_EN	0	TX_EN	15
16	POD_VS2	3.3	POD_VS2	16
17	YX_I	3.3	YX_I	17
18	RSTA	0	RSTA	18
19	OOB_EN	0	OOB_EN	19
20	WAITA	3.3	WAITA	20
21	MA3	0	MA3	21
22	DSUB_DET	0	DSUB_DET	22
23	MA2	0	MA2	23
24	REG	3.3	REG	24
25	MA1	3.3	MA1	25
26	MOVALA	0	MOVALA	26
27	MA0	0	MA0	27
28	MOSTRTA	0	MOSTRTA	28
29	MDO	0	MDO	29
30	MDOA0	0	MDOA0	30
31	MD1	0	MD1	31
32	MDOA1	3.3	MDOA1	32
33	MD2	3.3	MD2	33
34	MDOA2	0	MDOA2	34
35	WE_ROM	0	WE_ROM	35
36	CD2A	3.3	CD2A	36
37	GND	0	GND	37
38	V+3.3V_UCOM	3.4	V+3.3V_UCOM	38
39	TEMP2_P	2.2	TEMP2_P	39
40	GND	0	GND	40

POD Assy — MTB MAIN Assy

CN9003(CKS3826-)		Voltage	CN4013(AKM1233- -TBB)	
No.	Name	(V)	Name	No.
12	PC_H	0	PC_H	12
11	PC_V	0	PC_V	11
10	GND	0	GND	10
9	PC_B	2.4*	PC_B	9
8	GND	0	GND	8
7	PC_G	2.4*	PC_G	7
6	GND	0	GND	6
5	PC_R	2.4*	PC_R	5
4	GND	0	GND	4
3	V+5V_A	5	V+5V_A	3
2	GND	0	GND	2
1	V+9V_A	9.2	V+9V_A	1

* When PC signal is not inputted.

AUDIO Assy — MTB MAIN Assy

CN3752(KM200NA11)		Voltage	CN4007(KM200NA11)	
No.	Name	(V)	Name	No.
11	PSW_A	2.8	PSW_A	11
10	SDA_AU	3.4	SDA_AU	10
9	SCL_AU	3.4	SCL_AU	9
8	A_MUTE	0	A_MUTE	8
7	A_STBY_B	3.3	A_STBY_B	7
6	GND	0	GND	6
5	AUDIO_R	0	AUDIO_R	5
4	GND	0	GND	4
3	AUDIO_L	0	AUDIO_L	3
2	GND	0	GND	2
1	A_NG_B	2.8	A_NG_B	1

REM/KEY Ass'y — MTB MAIN Assy

		Voltage	CN4010(KM200NA7)	
No.	Name	(V)	Name	No.
		0	REM	7
		0	GND	6
		5.1	V+5.1V_STB	5
		3.3	V+3.3V_STB	4
		3.3	KEY_AD1	3
		3.3	KEY_AD2	2
		0	GND	1

POWER SUPPLY UNIT — MTB MAIN Assy

P8(B13B-PH-K-S)		Voltage	CN4002(KM200NA13)	
No.	Name	(V)	Name	No.
1	V+6.5V	6.9	V+6.5V	1
2	GND	0	GND	2
3	V+12V	12.2	V+12V	3
4	GND	0	GND	4
5	V+16.5V	17.3	V+16.5V	5
6	GND	0	GND	6
7	V+5_1V	5.1	V+5_1V	7
8	V+5_1V	5.1	V+5_1V	8
9	V+5_1V	5.1	V+5_1V	9
10	V+5_1V	5.1	V+5_1V	10
11	GND	0	GND	11
12	GND	0	GND	12
13	GND	0	GND	13

POWER SUPPLY UNIT — MTB MAIN Assy

P9(B11B-PH-K-S)		Voltage	CN4008(KM200NA11)	
No.	Name	(V)	Name	No.
1	M_SW_DET	3.2	M_SW_DET	1
2	AC_DET	2.9	AC_DET	2
3	N.C.	3.35	N.C.(RELAY)	3
4	GND-D	0	GND	4
5	STB3.3V	3.3	V+3.3V_STB	5
6	GND-D	0	GND	6
7	STBY5.1V	5.1	V+5.1V_STB	7
8	GND-D	0	GND	8
9	+35V	37.3	V+35V	9
10	GND-D	0	GND	10
11	US-SW	2.3	US-SW	11

FAN — MTB MAIN Assy

		Voltage	CN4009(AKM1274- -TBB)	
No.	Name	(V)	Name	No.
		7.7/11	FAN_VCC	1
		0	FAN_NG1	2
		0	GND	3

TRAP-SW — MTB MAIN Assy

		Voltage	CN4018(AKM1213- -TFB)	
No.	Name	(V)	Name	No.
		3.3	TRAP_SW	1
			NC	2
		3.3	V+3_3V_UCOM	3

USB — MTB MAIN Assy

		Voltage	CN7101(AKM1276- -TBB)	
No.	Name	(V)	Name	No.
		5.0	VBUS	1
		0	D-	2
		0	D+	3
		0	GND	4
		0	SHILD	5

LED — MTB MAIN Assy

		Voltage	CN4006(KM200NA6)	
No.	Name	(V)	Name	No.
		0	LED-	1
		3.3	LED_ON	2
		0	LED_OFF	3
		0	LED_REC	4
		0	LED_MDM	5
		0	LED-	6

42 DIGITAL ASSY MAIN ASSY

CN3001(AKM1353- -TFB)		Voltage (V)	CN4001(AKM1349- -TBB)	
No.	Name		Name	No.
1	GND	0	GND	1
2	V_3.3V_UCOM	3.3	V_3.3V_UCOM	2
3	INP_MUTE	0	INP_MUTE	3
4	THEATER	0	THEATER	4
5	VD	0/3.3	VD	5
6	HD	0/3.3	HD	6
7	DE	0/3.3	DE	7
8	GND	0	GND	8
9	CLK	0/3.3	CLK	9
10	GND	0	GND	10
11	GND	0	GND	11
12	VIDEO_R9	0	VIDEO_R9	12
13	VIDEO_R8	0	VIDEO_R8	13
14	VIDEO_R7	0	VIDEO_R7	14
15	VIDEO_R6	0	VIDEO_R6	15
16	VIDEO_R5	0	VIDEO_R5	16
17	VIDEO_R4	0	VIDEO_R4	17
18	VIDEO_R3	0	VIDEO_R3	18
19	VIDEO_R2	0	VIDEO_R2	19
20	VIDEO_R1	0	VIDEO_R1	20
21	VIDEO_R0	0	VIDEO_R0	21
22	GND	0	GND	22
23	VIDEO_G9	0	VIDEO_G9	23
24	VIDEO_G8	0	VIDEO_G8	24
25	VIDEO_G7	0	VIDEO_G7	25
26	VIDEO_G6	0	VIDEO_G6	26
27	VIDEO_G5	0	VIDEO_G5	27
28	VIDEO_G4	0	VIDEO_G4	28
29	VIDEO_G3	0	VIDEO_G3	29
30	VIDEO_G2	0	VIDEO_G2	30
31	VIDEO_G1	0	VIDEO_G1	31
32	VIDEO_G0	0	VIDEO_G0	32
33	GND	0	GND	33
34	VIDEO_B9	0	VIDEO_B9	34
35	VIDEO_B8	0	VIDEO_B8	35
36	VIDEO_B7	0	VIDEO_B7	36
37	VIDEO_B6	0	VIDEO_B6	37
38	VIDEO_B5	0	VIDEO_B5	38
39	VIDEO_B4	0	VIDEO_B4	39
40	VIDEO_B3	0	VIDEO_B3	40
41	VIDEO_B2	0	VIDEO_B2	41
42	VIDEO_B1	0	VIDEO_B1	42
43	VIDEO_B0	0	VIDEO_B0	43
44	GND	0	GND	44
45	Reserve	0	Reserve	45
46	AC_OFF	0	AC_OFF	46
47	TXD_MD	3.3	TXD_MD	47
48	RXD_MD	3.3	RXD_MD	48
49	REQ_MD	0	REQ_MD	49
50	MODE	0	MODE	50

■ 42 DIGITAL ASSY

CN3505 (D19) ↔ 42 X DRIVE ASSY CN1001 (X1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	PSW	O	Function standby control signal	0	TP3519
2	XSUS_PD	I	X drive PD signal	0	TP3513
3	XDD_PD	I	X drive PD signal	0	TP3514
4	XDRV_PD	I	X drive PD signal	0	TP3515
5	GND	–	GND	–	–
6	XRsv1	I	X drive control signal (reserve)	–	–
7	XSUS-MSK	I	X drive control signal	0 to 3.3	–
8	GND	–	GND	–	–
9	XNR-D	O	X drive control signal	0 to 3.3	–
10	GND	–	GND	–	–
11	XSUS-G	O	X drive control signal	0 to 3.3	–
12	GND	–	GND	–	–
13	XSUS-D	O	X drive control signal	0 to 3.3	–
14	GND	–	GND	–	–
15	XSUS-U	O	X drive control signal	0 to 3.3	–
16	GND	–	GND	–	–
17	XSUS-B	O	X drive control signal	0 to 3.3	–
18	GND	–	GND	–	–

CN3506 (D20) ↔ 42 Y DRIVE ASSY CN2001 (Y1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	GND	–	GND	–	–
2	SCN5V_PD	I	Y drive PD signal	0	TP3507
3	SI_L	O	Scan control signal	0 to 3.3	–
4	SI_H	O	Scan control signal	0 to 3.3	–
5	GND	–	GND	–	–
6	CLR	O	Scan control signal	0 to 3.3	–
7	CLK	O	Scan control signal	0 to 3.3	–
8	GND	–	GND	–	–
9	LE	O	Scan control signal	0 to 3.3	–
10	OC2	O	Scan control signal	0 to 3.3	–
11	OC1 (–1)	O	Scan control signal	0 to 3.3	–
12	GND	–	GND	–	–
13	YSUS-B	O	Y drive control signal	0 to 3.3	–
14	YSUS-U	O	Y drive control signal	0 to 3.3	–
15	GND	–	GND	–	–
16	YSUS-D	O	Y drive control signal	0 to 3.3	–
17	YSUS-G	O	Y drive control signal	0 to 3.3	–
18	GND	–	GND	–	–
19	YPR-U	O	Y drive control signal	0 to 3.3	–
20	YRsv1	–	Y drive control signal (reserve)	–	–
21	GND	–	GND	–	–
22	YSUS-MSK	O	Y drive control signal	0 to 3.3	–
23	YNRST	O	Y drive control signal	0 to 3.3	–
24	YRsv2	–	Y drive control signal (reserve)	–	–
25	GND	–	GND	–	–
26	YENOFS	O	Y drive control signal	0 to 3.3	–
27	YRsv3	O	Y drive control signal (reserve)	–	–
28	YSOFT-D	O	Y drive control signal	0 to 3.3	–
29	GND	–	GND	–	–
30	VOFS_ADJ	–	Vofs offset adjustment	1.85	TP3181
31	VYPRST_ADJ	O	Reset voltage adjustment	1.21	TP3182
32	GND	–	GND	–	–
33	GND	–	GND	–	–
34	N.C	–	Non connection	–	–
35	GND	–	GND	–	–
36	YDD_PD	I	Y drive PD signal	0	TP3509
37	YSUS_PD	I	Y drive PD signal	0	TP3510
38	SCAN_PD	I	Y drive PD signal	0	TP3511
39	YDRV_PD	I	Y drive PD signal	0	TP3512
40	PSW	O	Function standby control signal	0	TP3518

A

CN3501 (D15) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 4	TP3501
3	N.C	–	Non connection	–	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	–	GND	–	–
8	GND	–	GND	–	–
9	N.C	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	N.C	–	Non connection	–	–
13	GND	–	GND	–	–
14	N.C	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	N.C	–	Non connection	–	–
18	GND	–	GND	–	–
19	N.C	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	N.C	–	Non connection	–	–
23	GND	–	GND	–	–
24	N.C	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	N.C	–	Non connection	–	–
28	GND	–	GND	–	–
29	N.C	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	N.C	–	Non connection	–	–
33	GND	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	–	GND	–	–
38	ADRS_3	O	Output timing control	0	–
39	ADRS_2	O	Output timing control	0	–
40	GND	–	GND	–	–

CN3502 (D16) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 4	TP3502
3	N.C	–	Non connection	–	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	–	GND	–	–
8	GND	–	GND	–	–
9	N.C	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	N.C	–	Non connection	–	–
13	GND	–	GND	–	–
14	N.C	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	N.C	–	Non connection	–	–
18	GND	–	GND	–	–
19	N.C	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	N.C	–	Non connection	–	–
23	GND	–	GND	–	–
24	N.C	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	N.C	–	Non connection	–	–
28	GND	–	GND	–	–
29	N.C	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	N.C	–	Non connection	–	–
33	GND	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	–	GND	–	–
38	ADRS_3	O	Output timing control	0	–
39	ADRS_2	O	Output timing control	0	–
40	GND	–	GND	–	–

B C D E F

CN3503 (D17) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 4	TP3503
3	N.C	–	Non connection	–	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	–	GND	–	–
8	GND	–	GND	–	–
9	N.C	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	N.C	–	Non connection	–	–
13	GND	–	GND	–	–
14	N.C	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	N.C	–	Non connection	–	–
18	GND	–	GND	–	–
19	N.C	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	N.C	–	Non connection	–	–
23	GND	–	GND	–	–
24	N.C	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	N.C	–	Non connection	–	–
28	GND	–	GND	–	–
29	N.C	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	N.C	–	Non connection	–	–
33	GND	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	–	GND	–	–
38	ADRS_3	O	Output timing control	0	–
39	ADRS_2	O	Output timing control	0	–
40	GND	–	GND	–	–

CN3504 (D18) ↔ 42 ADDRESS ASSY CN1501 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	N.C	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 4	TP3504
3	PSIZE	I	Panel size judge signal	3.3	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply	8	TP3618
6	V+8V	O	+8 V power supply	8	TP3618
7	GND	–	GND	–	–
8	GND	–	GND	–	–
9	N.C	–	Non connection	–	–
10	TA–	O	LVDS data	1 to 1.4	–
11	TA+	O	LVDS data	1 to 1.4	–
12	N.C	–	Non connection	–	–
13	GND	–	GND	–	–
14	N.C	–	Non connection	–	–
15	TB–	O	LVDS data	1 to 1.4	–
16	TB+	O	LVDS data	1 to 1.4	–
17	N.C	–	Non connection	–	–
18	GND	–	GND	–	–
19	N.C	–	Non connection	–	–
20	TC–	O	LVDS data	1 to 1.4	–
21	TC+	O	LVDS data	1 to 1.4	–
22	N.C	–	Non connection	–	–
23	GND	–	GND	–	–
24	N.C	–	Non connection	–	–
25	TCLK–	O	LVDS data	1 to 1.4	–
26	TCLK+	O	LVDS data	1 to 1.4	–
27	N.C	–	Non connection	–	–
28	GND	–	GND	–	–
29	N.C	–	Non connection	–	–
30	TD–	O	LVDS data	1 to 1.4	–
31	TD+	O	LVDS data	1 to 1.4	–
32	N.C	–	Non connection	–	–
33	GND	–	GND	–	–
34	GND	–	GND	–	–
35	V+3V_D	O	+3 V power supply	3.3	TP3607
36	V+3V_D	O	+3 V power supply	3.3	TP3607
37	GND	–	GND	–	–
38	ADRS_3	O	Output timing control	0	–
39	ADRS_2	O	Output timing control	0	–
40	GND	–	GND	–	–

CN3002 (D12) ↔ Reserve (Non connection)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3V_D	O	+3.3 V power supply output	3.3	–
2	V+3V_D	O	+3.3 V power supply output	3.3	–
3	V+3V_D	O	+3.3 V power supply output	3.3	–
4	GND_D	–	GND	–	–
5	GND_D	–	GND	–	–
6	GND_D	–	GND	–	–
7	LED_R	O	Red LED control output	0 to 3.3	–
8	LED_B	O	Blue LED control output	0 to 3.3	–
9	MSEL	I	Control select	0 to 3.3	–
10	PBF	I	Panel type judge	0 to 3.3	–
11	NC	I	Non connection	–	–
12	YOBI0	I	Reserve input	0 to 3.3	–
13	YOBI1	I	Reserve input	0 to 3.3	–
14	YOBI2	I	Reserve input	0 to 3.3	–
15	YOBI3	I	Reserve input	0 to 3.3	–
16	YOBI4	I	Reserve input	0 to 3.3	–
17	NC	I	Non connection	–	–
18	NC	I	Non connection	–	–
19	V+3V_STB	O	STB 3.3 V power supply output	3.3	–
20	GND_D	–	GND	–	–

CN3151 (D24) ↔ SENSOR ASSY CN3651 (TE1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3.3V_EEP	O	Power supply output for memory	3.3	–
2	E_SCL	O	IIC communication clock signal	0 to 3.3	–
3	E_SDA	O	IIC communication data signal	0 to 3.3	–
4	TEMP1	I	Panel temperature sensor signal	0 to 3.3	–
5	GND	–	GND	–	–

CN3601 (D21) ↔ POWER SUPPLY UNIT (P4)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+12V	I	+12 V power supply input	12	–
2	V+12V	I	+12 V power supply input	12	–
3	GND	–	GND	–	–
4	GND	–	GND	–	–
5	V+3.3V_STB	I	STB3.3 V power supply input	0 to 3.3	–
6	GND	–	GND	–	–
7	M_SW_DET	I	Mechanism switch detection signal input	0 to 3.3	–
8	EXT_PD	O	Power down signal	0 to 3.3	–
9	VSUS_ADJ	O	VSUS power supply adjustment signal	0 to 3.3	–
10	PS_PD	I	Power supply PD signal	0 to 3.3	–
11	RELAY	O	Relay control	0 to 3.3	–
12	DRF_B	O	Large power supply ON/OFF control signal	0 to 3.3	–
13	AC_DET	I	AC power supply state input	0 to 3.3	–
14	PD_TRG_B	I	Power down trigger signal	0 to 3.3	–

■ Pin Function

AUDIO ASSY CN3752 (A2) ↔ MAIN ASSY CN4007 (M9)

Pin No.	Pin Name	I/O	Function	Remarks
1	A_NG_B	O	DC detection, disconnection of cable detection	L : Abnormal, H : Normal
2	GND	–	GND for small signal	–
3	AUDIO_L	I	Small signal L ch	–
4	GND	–	GND for small signal	–
5	AUDIO_R	I	Small signal R ch	–
6	GND	–	GND for small signal	–
7	A_STBY_B	I	MUTE ON/OFF signal for LA4625 IC internal circuit	L : Standby, H : ON
8	A_MUTE	I	MUTE ON/OFF signal for LA4625 IC external circuit	L : MUTE OFF, H : MUTE
9	SCL_AU	I	CLK of I2C for NJW1183GK1 IC	–
10	SDA_AU	I/O	DATA of I2C for NJW1183GK1 IC	–
11	PSW_A	I	ON/OFF switch for 12 V regulator IC	L : OFF, H : ON

AUDIO ASSY CN3751 (A1) ↔ POWER SUPPLY UNIT (P5)

Pin No.	Pin Name	I/O	Function	Remarks
1	+16.5V	–	Power supply (16.5 V) for LA4625 IC	–
2	GND_D	–	Return GND for LA4625 IC	–
3	GND_D	–	Return GND for LA4625 IC	–

AUDIO ASSY CN3753 (A3) ↔ Speaker

Pin No.	Pin Name	I/O	Function	Remarks
1	RH+	O	Toweeter output R+	–
2	RL+	O	Woofer output R+ (Speaker output R+)	–
3	RH–	O	Toweeter output R–	–
4	RL–	O	Woofer output R– (Speaker output R–)	–
5	LL+	O	Woofer output L+ (Speaker output L+)	–
6	LH+	O	Toweeter output L+	–
7	LL–	O	Woofer output L– (Speaker output L–)	–
8	LH–	O	Toweeter output L–	–

SIDE KEY ASSY CN9501 (SW1) ↔ MAIN ASSY CN4010 (M8)

Pin No.	Pin Name	I/O	Function	Remarks
1	GND	–	GND	–
2	KEY_AD2	O	KEY voltage 2	–
3	KEY_AD1	O	KEY voltage 1	–
4	V+3.3V_STB	–	Standby 3.3 V power supply	–

42 &60 LED ASSY CN9601 (L1) ↔ MAIN ASSY CN4006 (M5)

Pin No.	Pin Name	I/O	Function	Remarks
1	LED–	–	LED signal return	–
2	LED_ON	I	LED control for power ON	H : LED_ON, L : LED_OFF
3	LED_OFF	I	LED control for standby	H : LED_ON, L : LED_OFF
4	LED_REC	I	LED control for REC	H : LED_ON, L : LED_OFF
5	LED_MDM	I	–	–
6	LED–	–	LED signal return	–

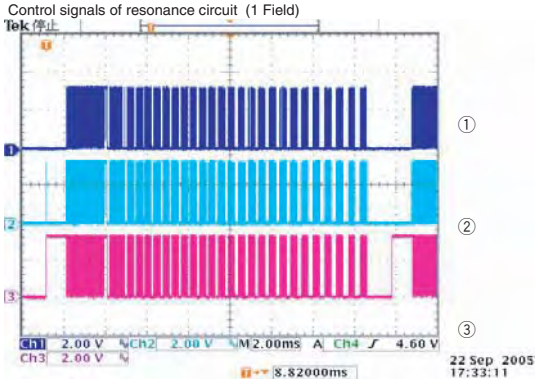
LED IR ASSY CN9701 (RE1) ↔ MAIN ASSY CN4010 (M8)

Pin No.	Pin Name	I/O	Function	Remarks
1	V+5.1V_STB	–	Standby 5.1 V power supply	–
2	REM	O	Remote control signal	–
3	LED–	–	LED signal return	–
4	LED_REC	I	–	–
5	LED_MDM	I	–	–
6	GND	–	GND	–

4.17 WAVEFORMS

■ 42 ADDRESS Ass'y (AWV2335-)

Control signals of resonance circuit (1 Field)



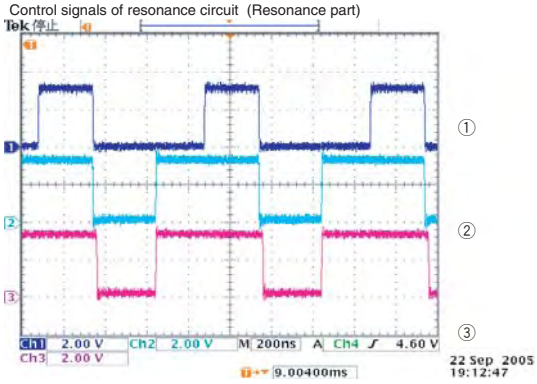
input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 : ADR_B side-A test plane "B"
V : 2V/div
H : 2ms/div

② CH2 : ADR_U side-A test plane "U"
V : 2V/div
H : 2ms/div

③ CH3 : ADR_D side-A test plane "D"
V : 2V/div
H : 2ms/div

Control signals of resonance circuit (Resonance part)



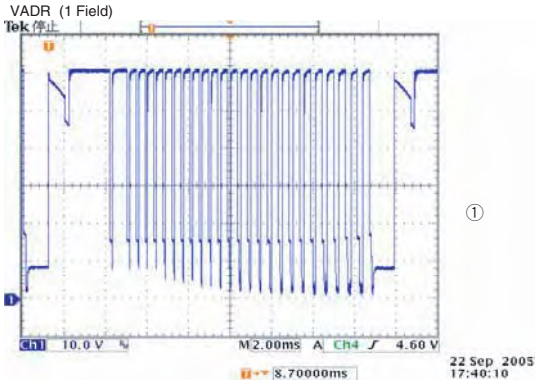
input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 : ADR_B side-A test plane "B"
V : 2V/div
H : 200ns/div

② CH2 : ADR_U side-A test plane "U"
V : 2V/div
H : 200ns/div

③ CH3 : ADR_D side-A test plane "D"
V : 2V/div
H : 200ns/div

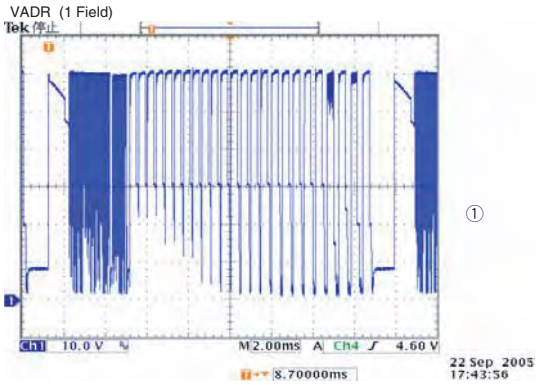
VADR (1 Field)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 :IC1555 3pin (VDD2) (side-A through hole)
V : 10V/div
H : 2ms/div

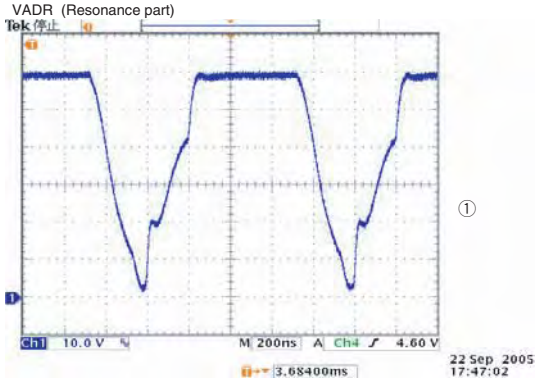
VADR (1 Field)



input : VIDEO 60Hz
signal : Checkered pattern of Black- White (MKSS13)

① CH1 :IC1555 3pin (VDD2) (side-A through hole)
V : 10V/div
H : 2ms/div

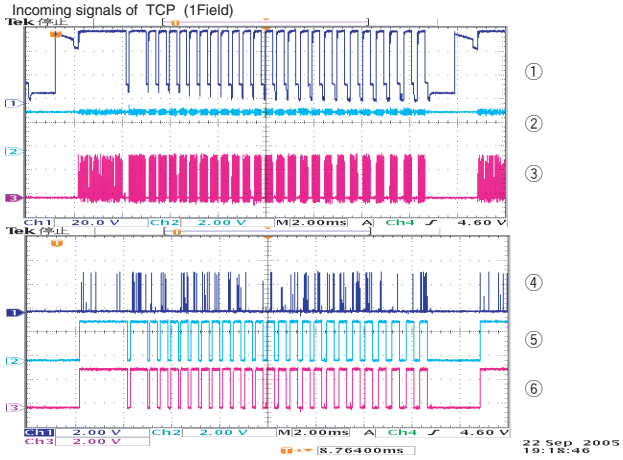
VADR (Resonance part)



input : VIDEO 60Hz
signal : Checkered pattern of Black- White (MKSS13)

① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 10 V/div
H : 200 ns/div

Incoming signals of TCP (1Field)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 20 V/div
H : 2 ms/div

② CH2 : IC1555 9pin (A3) side-A test plane"R_E"
V : 2 V/div
H : 2 ms/div

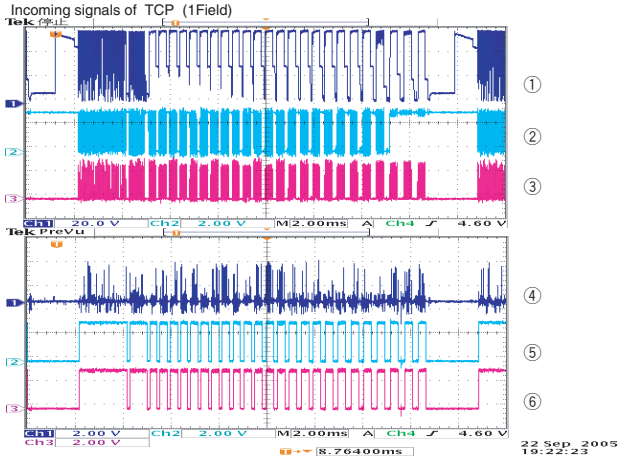
③ CH3 : IC1555 16pin (CLK) side-A test plane "CLK1"
V : 2 V/div
H : 2 ms/div

④ CH1 : IC1555 14pin (LE) side-A test plane"LE_E"
V : 2 V/div
H : 2 ms/div

⑤ CH2 : IC1555 19pin (HBLK) side-A test plane"HBLK"
V : 2 V/div
H : 2 ms/div

⑥ CH3 : IC1555 17pin (LBLK) side-A test plane"LBLK"
V : 2 V/div
H : 2 ms/div

Incoming signals of TCP (1Field)



input : VIDEO 60Hz
signal : Checkered pattern of Black- White (MKSS13)

① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 20 V/div
H : 2 ms/div

② CH2 : IC1555 9pin (A3) side-A test plane"R_E"
V : 2 V/div
H : 2 ms/div

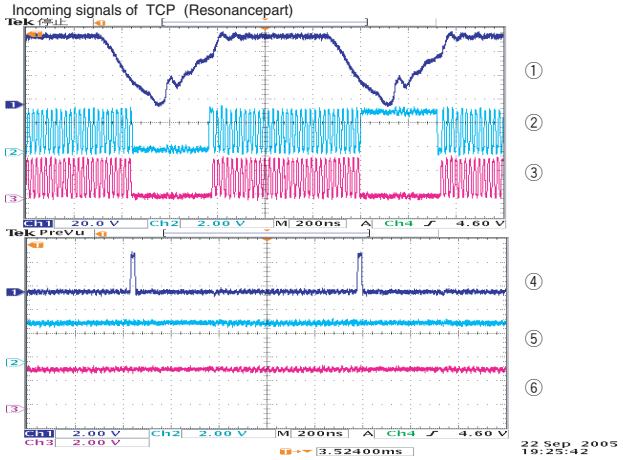
③ CH3 : IC1555 16pin (CLK) side-A test plane"CLK1"
V : 2 V/div
H : 2 ms/div

④ CH1 : IC1555 14pin (LE) side-A test plane"LE_E"
V : 2 V/div
H : 2 ms/div

⑤ CH2 : IC1555 19pin (HBLK) side-A test plane"HBLK"
V : 2 V/div
H : 2 ms/div

⑥ CH3 : IC1555 17pin (LBLK) side-A test plane"LBLK"
V : 2 V/div
H : 2 ms/div

Incoming signals of TCP (Resonancepart)



input : VIDEO 60Hz
signal : Checkered pattern of Black- White (MKSS13)

① CH1 : IC1555 3pin (VDD2) (side-Athrough hole)
V : 20 V/div
H : 200 ns/div

② CH2 : IC1555 9pin (A3) side-A test plane"R_E"
V : 2 V/div
H : 200 ns/div

③ CH3 : IC1555 16pin (CLK) side-A test plane"CLK1"
V : 2 V/div
H : 200 ns/div

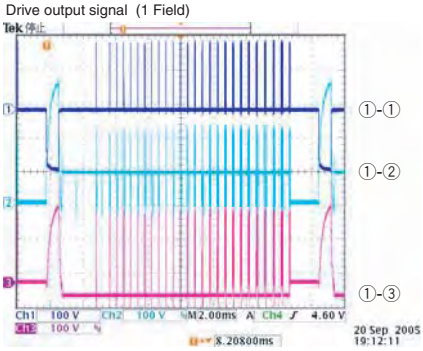
④ CH1 : IC1555 14pin (LE) side-A test plane"LE_E"
V : 2 V/div
H : 200 ns/div

⑤ CH2 : IC1555 19pin (HBLK) side-A test plane"HBLK"
V : 2 V/div
H : 200 ns/div

⑥ CH3 : IC1555 17pin (LBLK) side-A test plane"LBLK"
V : 2 V/div
H : 200 ns/div

■ 42 X DRIVE, 42 Y DRIVE Ass'y (AWW1196, AWV2400)
42 SCAN Ass'y (AWV2362)

Drive output signal (1 Field)



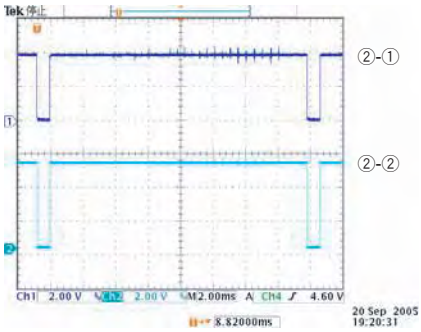
input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 :R1277(XPSUS)-K1203(SUSGND)
V : 100V/div H : 2ms/div (X DRIVE Assy)

② CH2 :K2701(SCANOUT)-K2330(SUSGND)
V : 100V/div H : 2ms/div (Y DRIVE Assy)

③ CH3 :F2301(YPSUS)-K2330(SUSGND)
V : 100V/div H : 2ms/div (Y DRIVE Assy)

X Drive pulse control signal (Color-bar) (Resonance part)

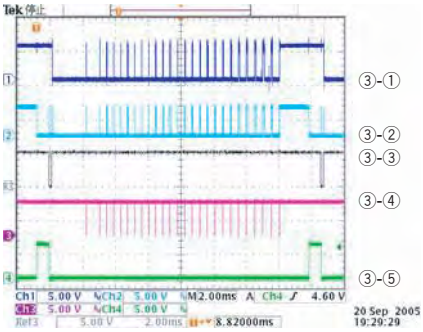


input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 :K1009(XSUS-MSK)-K1002(DGND)
V : 2V/div H : 2ms/div (X DRIVE Assy)

② CH2 :K1005(XNR-D)-K1002(DGND)
V : 2V/div H : 2ms/div (X DRIVE Assy)

Y Drive pulse control signal (Color-bar)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 :K2007(YNOFS)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

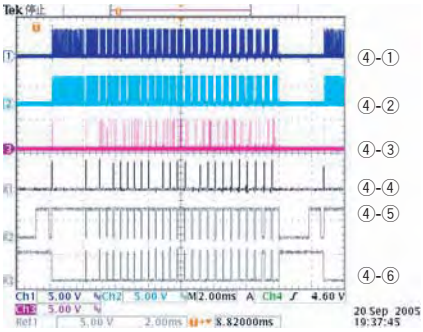
② CH2 :K2005(YSUS-MSK)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

③ Ref3 :K2008(YNRST)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

④ CH3 :K2006(SOFT_D)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

⑤ CH4 :K2023(YRP-U)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

Scan control signal (Color-bar)



input : VIDEO 60Hz
signal : COLOR BAR (MKSS17)

① CH1 :TP2001(LE)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

② CH2 :TP2008(CLK)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

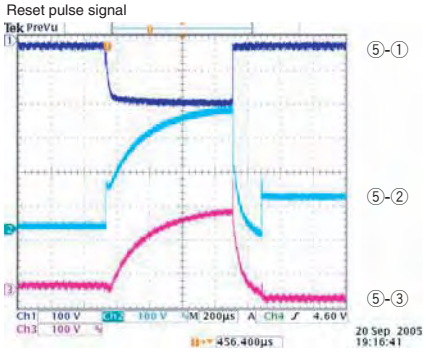
③ Ch3 : TP2003(Si-H)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

④ Ref1 :TP2004(CLR)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

⑤ Ref2 :TP2005(OC2)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

⑥ Ref3 :TP2006(OC1)-K2002(GND_D)
V : 5V/div H : 2ms/div (Y DRIVE Assy)

Reset pulse signal



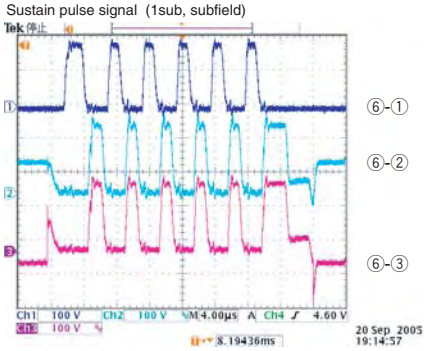
input : VIDEO 60 Hz
signal : COLOR BAR(MKSS17)

① CH1 : R1277(XPSUS)-K1203(SUSGND)
V : 100 V/div H : 200 µs/div (X DRIVE Assy)

② CH2 : K2701(SCANOUT)-K2330(SUSGND)
V : 100 V/div H : 200 µs/div (Y DRIVE Assy)

③ CH3 : F2301(YPSUS)-K2330(SUSGND)
V : 100V/div H : 200 µs/div (Y DRIVE Assy)

Sustain pulse signal (1sub, subfield)



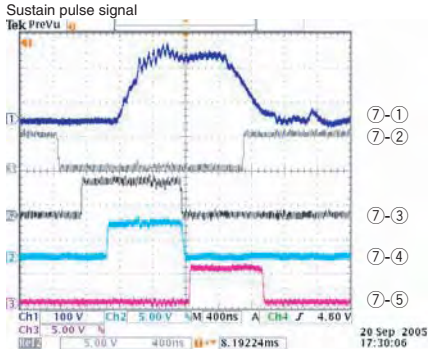
input : VIDEO 60 Hz
signal : COLOR BAR(MKSS17)

① CH1 : R1277(XPSUS)-K1203(SUSGND)
V : 100 V/div H : 4 µs/div (X DRIVE Assy)

② CH2 : K2701(SCANOUT)-K2330(SUSGND)
V : 100 V/div H : 4 µs/div (Y DRIVE Assy)

③ CH3 : F2301(YPSUS)-K2330(SUSGND)
V : 100 V/div H : 4 µs/div (Y DRIVE Assy)

Sustain pulse signal



input : VIDEO 60 Hz
signal : COLOR BAR(MKSS17)

① CH1 : F2301(YPSUS)-K2330(SUSGND)
V : 100 V/div H : 400 ns/div (Y DRIVE Assy)

② Ref3 : K2004(YSUS-G)-K2002(GND_D)
V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

③ Ref2 : K2011(YSUS-U)-K2002(GND_D)
V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

④ CH2 : K2009(YSUS-B)-K2002(GND_D)
V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

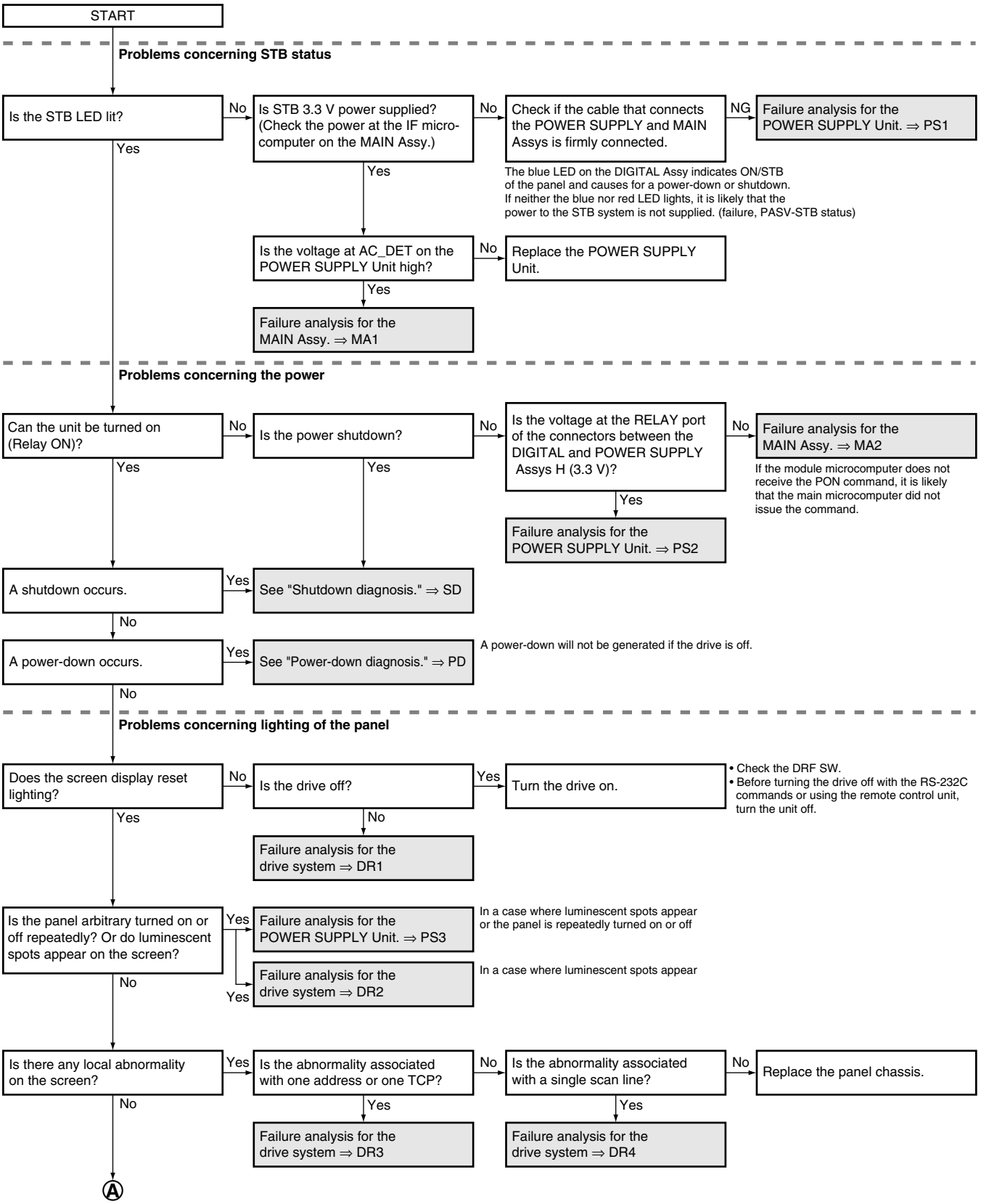
⑤ CH3 : K2010(YSUS-D)-K2002(GND_D)
V : 5 V/div H : 400 ns/div (Y DRIVE Assy)

5. DIAGNOSIS

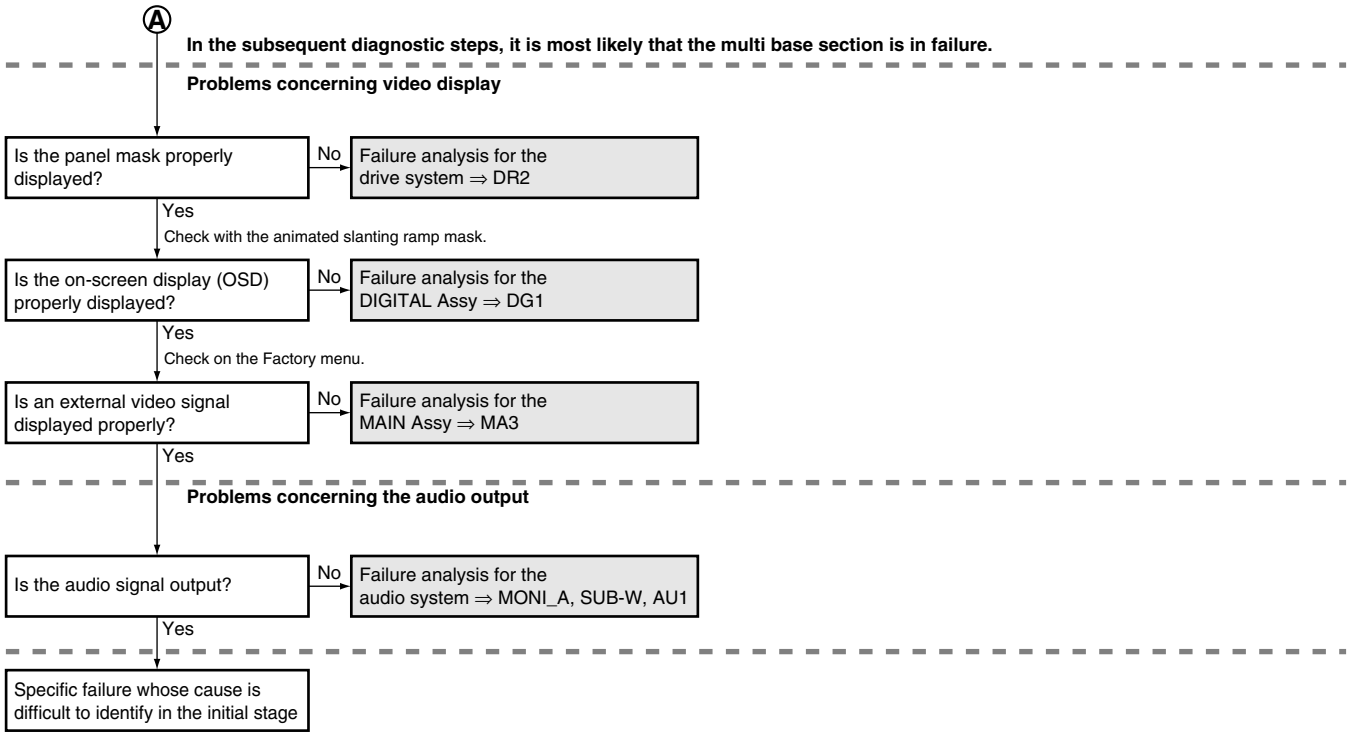
5.1 TROUBLESHOOTING

5.1.1 FLOWCHART OF FAILURE ANALYSIS FOR THE WHOLE UNIT

Flowchart of Failure Analysis for The Whole Unit

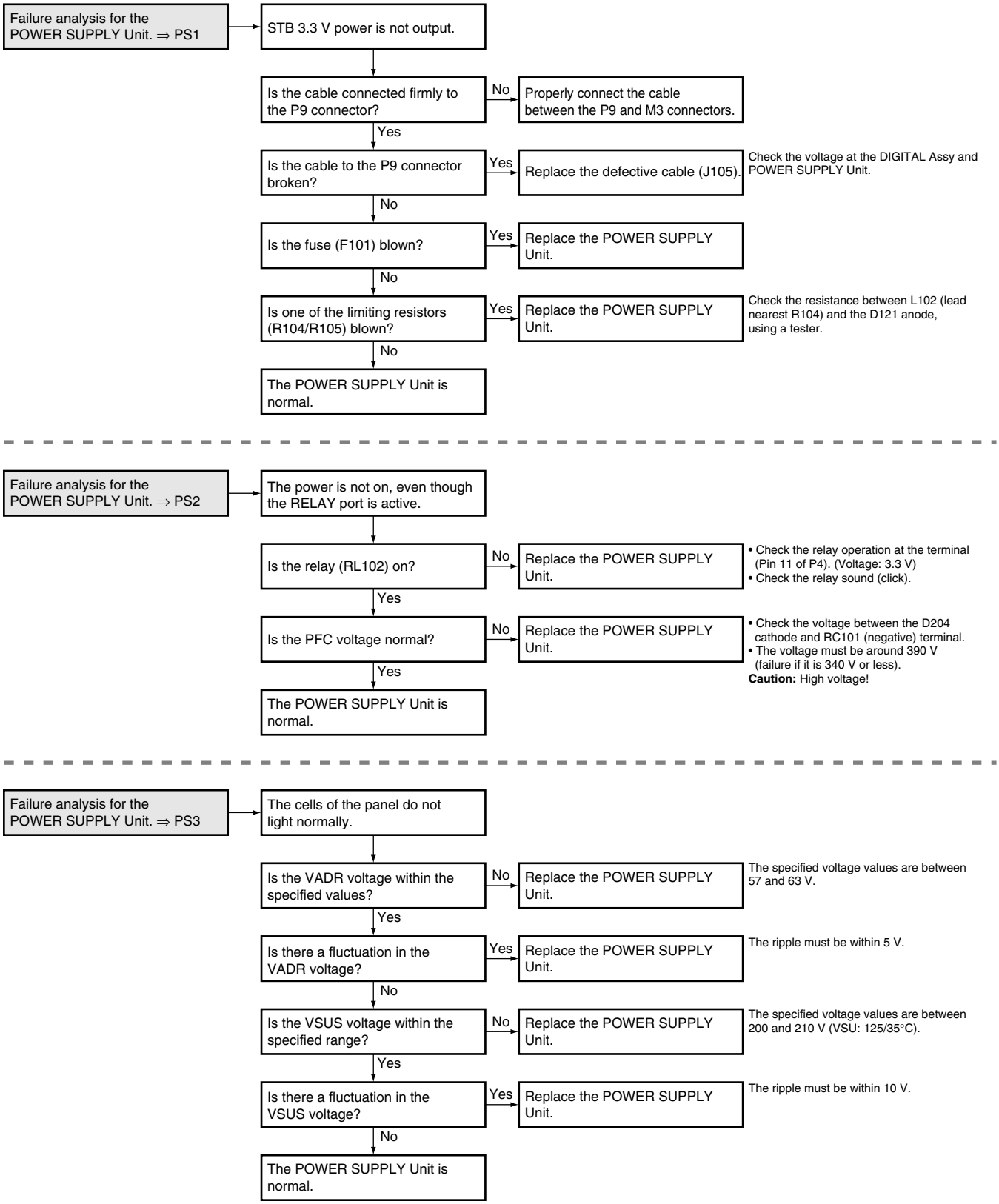

START
Problems concerning STB status
Is the STB LED lit?
No
Is STB 3.3 V power supplied? (Check the power at the IF micro-computer on the MAIN Assy.)
No
Check if the cable that connects the POWER SUPPLY and MAIN Assys is firmly connected.
NG
Failure analysis for the POWER SUPPLY Unit. ⇒ PS1
Yes
Yes
The blue LED on the DIGITAL Assy indicates ON/STB of the panel and causes for a power-down or shutdown. If neither the blue nor red LED lights, it is likely that the power to the STB system is not supplied. (failure, PASV-STB status)
Is the voltage at AC_DET on the POWER SUPPLY Unit high?
No
Replace the POWER SUPPLY Unit.
Yes
Failure analysis for the MAIN Assy. ⇒ MA1
Problems concerning the power
Can the unit be turned on (Relay ON)?
No
Is the power shutdown?
No
Is the voltage at the RELAY port of the connectors between the DIGITAL and POWER SUPPLY Assys H (3.3 V)?
No
Failure analysis for the MAIN Assy. ⇒ MA2
If the module microcomputer does not receive the PON command, it is likely that the main microcomputer did not issue the command.
Yes
Yes
Yes
Failure analysis for the POWER SUPPLY Unit. ⇒ PS2
A shutdown occurs.
Yes
See "Shutdown diagnosis." ⇒ SD
No
A power-down occurs.
Yes
See "Power-down diagnosis." ⇒ PD
A power-down will not be generated if the drive is off.
No
Problems concerning lighting of the panel
Does the screen display reset lighting?
No
Is the drive off?
Yes
Turn the drive on.
• Check the DRF SW.
• Before turning the drive off with the RS-232C commands or using the remote control unit, turn the unit off.
Yes
No
Failure analysis for the drive system ⇒ DR1
Is the panel arbitrary turned on or off repeatedly? Or do luminescent spots appear on the screen?
Yes
Failure analysis for the POWER SUPPLY Unit. ⇒ PS3
In a case where luminescent spots appear or the panel is repeatedly turned on or off
No
Yes
Failure analysis for the drive system ⇒ DR2
In a case where luminescent spots appear
Is there any local abnormality on the screen?
Yes
Is the abnormality associated with one address or one TCP?
No
Is the abnormality associated with a single scan line?
No
Replace the panel chassis.
No
Yes
Yes
Failure analysis for the drive system ⇒ DR3
Failure analysis for the drive system ⇒ DR4
Ⓐ

Flowchart of Failure Analysis for The Whole Unit


Ⓐ
In the subsequent diagnostic steps, it is most likely that the multi base section is in failure.
Problems concerning video display
Is the panel mask properly displayed?
No
Failure analysis for the drive system ⇒ DR2
Yes
Check with the animated slanting ramp mask.
Is the on-screen display (OSD) properly displayed?
No
Failure analysis for the DIGITAL Assy ⇒ DG1
Yes
Check on the Factory menu.
Is an external video signal displayed properly?
No
Failure analysis for the MAIN Assy ⇒ MA3
Yes
Problems concerning the audio output
Is the audio signal output?
No
Failure analysis for the audio system ⇒ MONI_A, SUB-W, AU1
Yes
Specific failure whose cause is difficult to identify in the initial stage

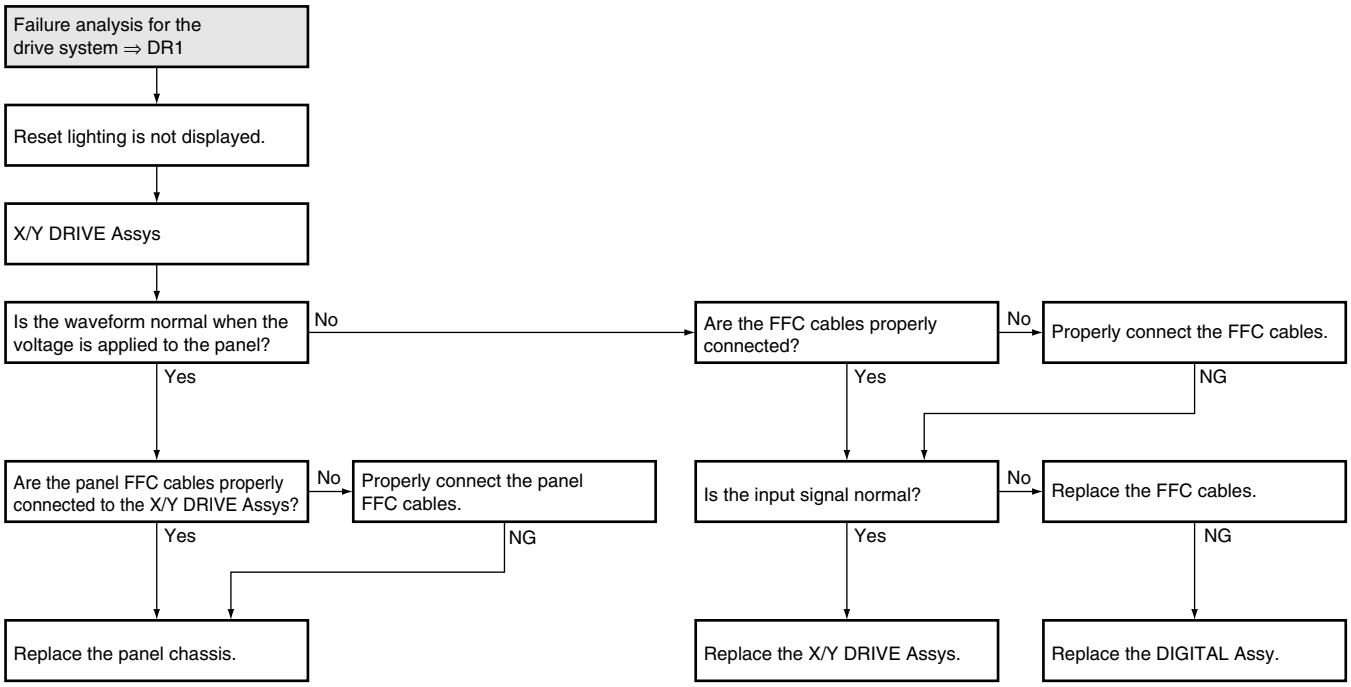
5.1.2 FLOWCHART OF FAILURE ANALYSIS FOR THE POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit

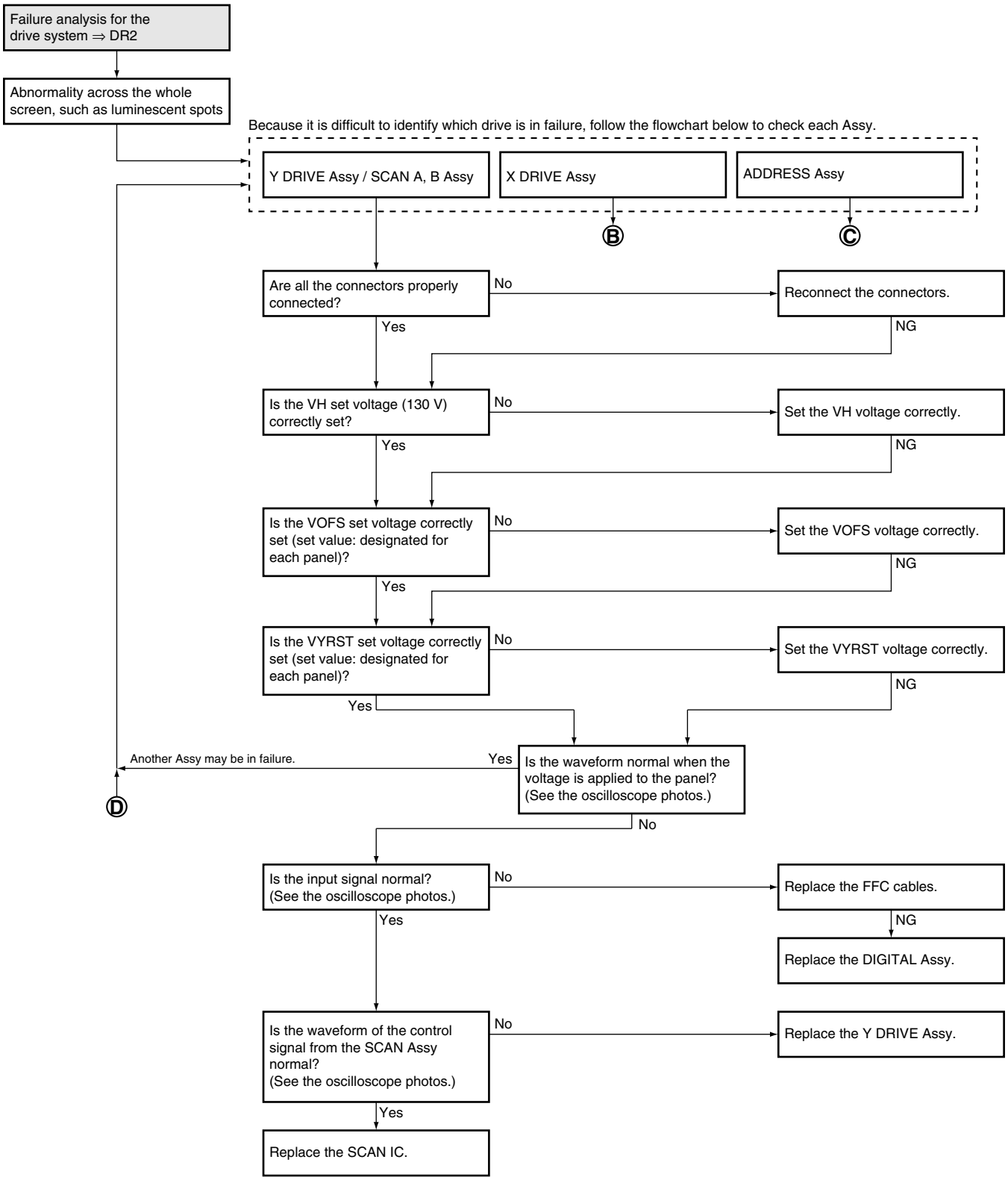

Failure analysis for the POWER SUPPLY Unit. ⇒ PS1
STB 3.3 V power is not output.
Is the cable connected firmly to the P9 connector?
No
Properly connect the cable between the P9 and M3 connectors.
Yes
Is the cable to the P9 connector broken?
Yes
Replace the defective cable (J105).
Check the voltage at the DIGITAL Assy and POWER SUPPLY Unit.
No
Is the fuse (F101) blown?
Yes
Replace the POWER SUPPLY Unit.
No
Is one of the limiting resistors (R104/R105) blown?
Yes
Replace the POWER SUPPLY Unit.
Check the resistance between L102 (lead nearest R104) and the D121 anode, using a tester.
No
The POWER SUPPLY Unit is normal.
Failure analysis for the POWER SUPPLY Unit. ⇒ PS2
The power is not on, even though the RELAY port is active.
Is the relay (RL102) on?
No
Replace the POWER SUPPLY Unit.
• Check the relay operation at the terminal (Pin 11 of P4). (Voltage: 3.3 V)
• Check the relay sound (click).
Yes
Is the PFC voltage normal?
No
Replace the POWER SUPPLY Unit.
• Check the voltage between the D204 cathode and RC101 (negative) terminal.
• The voltage must be around 390 V (failure if it is 340 V or less).
Caution: High voltage!
Yes
The POWER SUPPLY Unit is normal.
Failure analysis for the POWER SUPPLY Unit. ⇒ PS3
The cells of the panel do not light normally.
Is the VADR voltage within the specified values?
No
Replace the POWER SUPPLY Unit.
The specified voltage values are between 57 and 63 V.
Yes
Is there a fluctuation in the VADR voltage?
Yes
Replace the POWER SUPPLY Unit.
The ripple must be within 5 V.
No
Is the VSUS voltage within the specified range?
No
Replace the POWER SUPPLY Unit.
The specified voltage values are between 200 and 210 V (VSU: 125/35°C).
Yes
Is there a fluctuation in the VSUS voltage?
Yes
Replace the POWER SUPPLY Unit.
The ripple must be within 10 V.
No
The POWER SUPPLY Unit is normal.

5.1.3 FLOWCHART OF FAILURE ANALYSIS FOR THE DRIVE ASSY

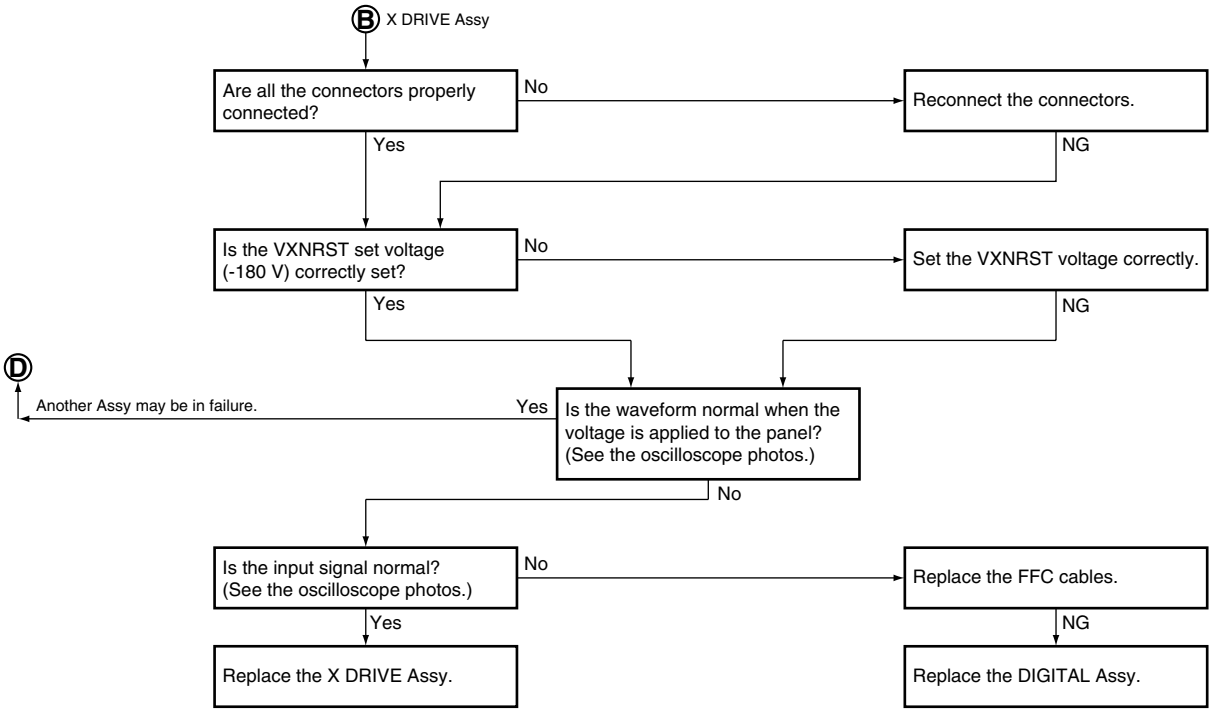
Flowchart of Failure Analysis for The Drive Assy

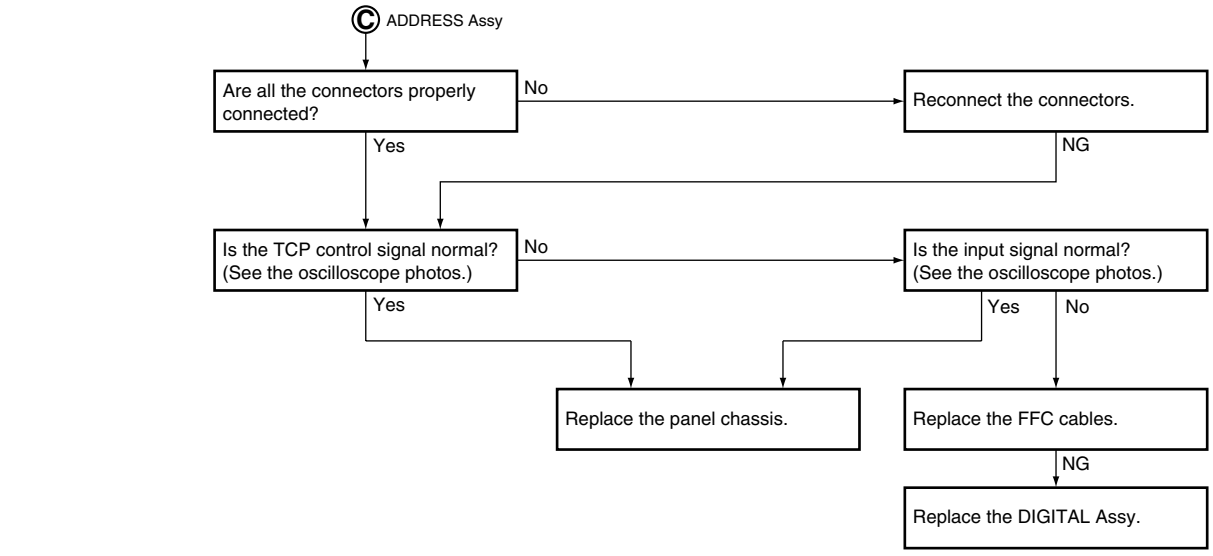


Flowchart of Failure Analysis for The Drive Assy

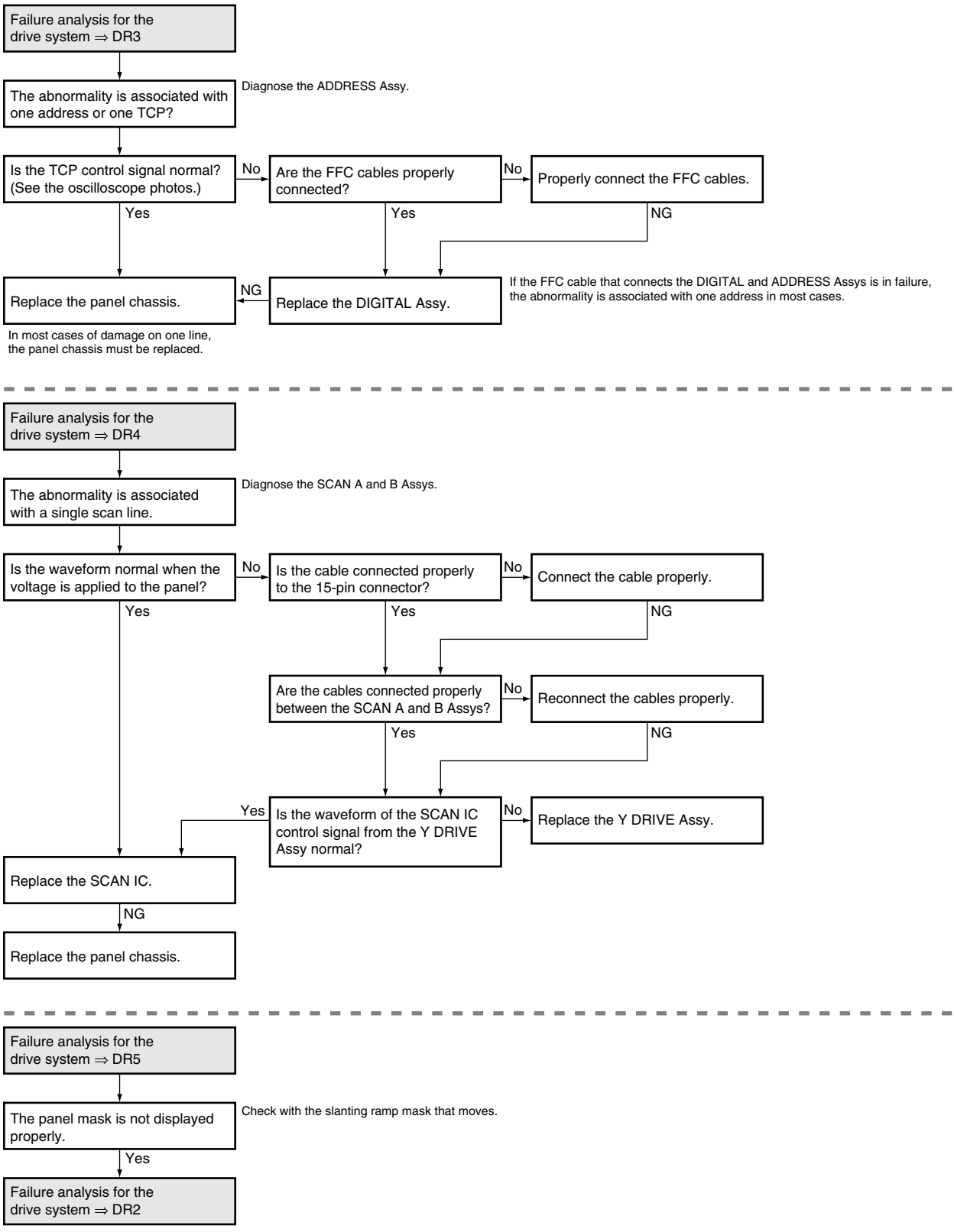

Failure analysis for the drive system ⇒ DR2
Abnormality across the whole screen, such as luminescent spots
Because it is difficult to identify which drive is in failure, follow the flowchart below to check each Assy.
Y DRIVE Assy / SCAN A, B Assy
X DRIVE Assy
ADDRESS Assy
Ⓑ
Ⓒ
Are all the connectors properly connected?
No
Reconnect the connectors.
NG
Yes
Is the VH set voltage (130 V) correctly set?
No
Set the VH voltage correctly.
NG
Yes
Is the VOFS set voltage correctly set (set value: designated for each panel)?
No
Set the VOFS voltage correctly.
NG
Yes
Is the VYRST set voltage correctly set (set value: designated for each panel)?
No
Set the VYRST voltage correctly.
NG
Yes
Another Assy may be in failure.
Yes
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
Ⓓ
No
Is the input signal normal? (See the oscilloscope photos.)
No
Replace the FFC cables.
NG
Replace the DIGITAL Assy.
Yes
Is the waveform of the control signal from the SCAN Assy normal? (See the oscilloscope photos.)
No
Replace the Y DRIVE Assy.
Yes
Replace the SCAN IC.

Flowchart of Failure Analysis for The Drive Assy



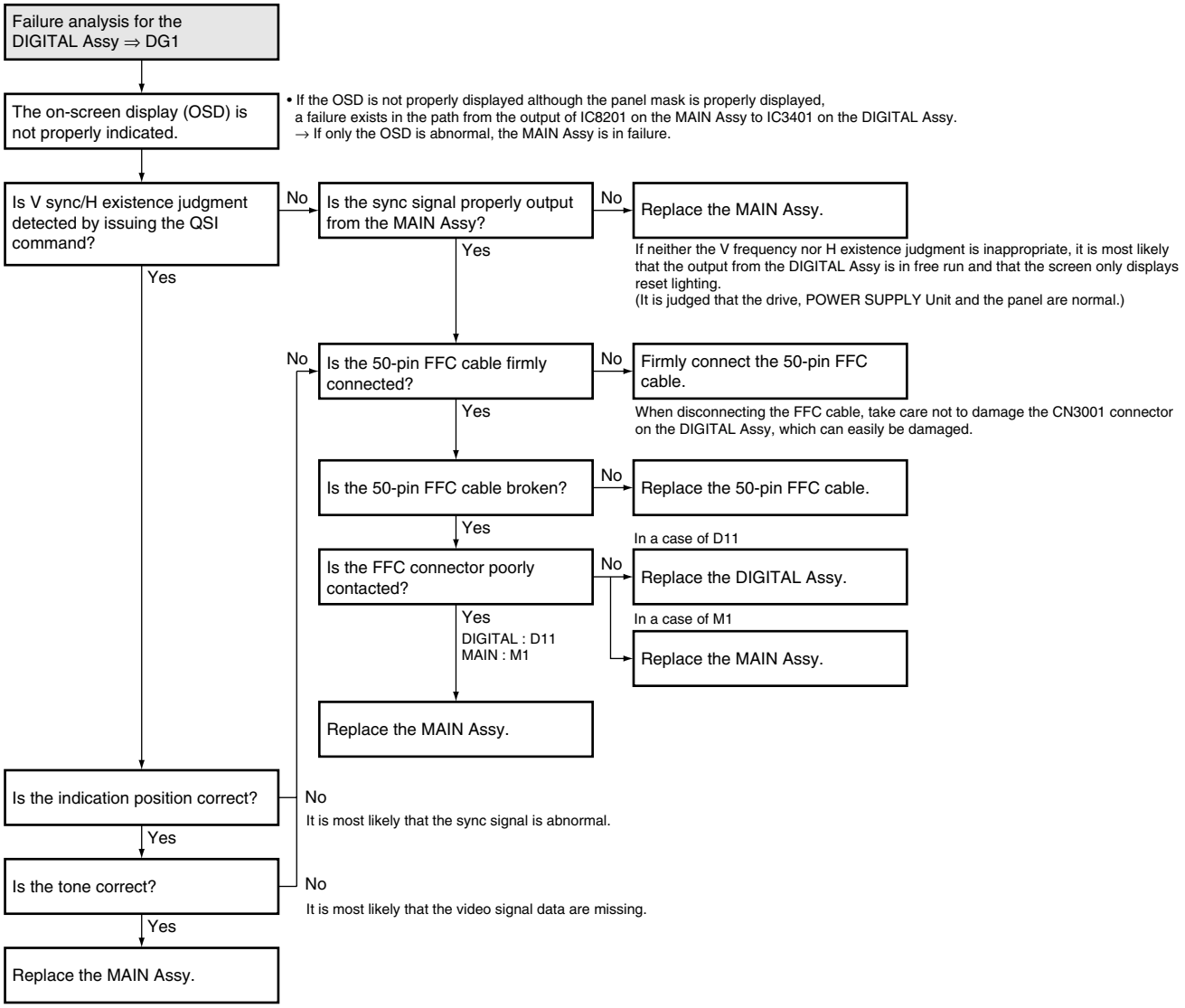


Flowchart of Failure Analysis for The Drive Assy


Failure analysis for the drive system ⇒ DR3
The abnormality is associated with one address or one TCP?
Diagnose the ADDRESS Assy.
Is the TCP control signal normal? (See the oscilloscope photos.)
No
Are the FFC cables properly connected?
No
Properly connect the FFC cables.
Yes
Yes
NG
Replace the panel chassis.
NG
Replace the DIGITAL Assy.
If the FFC cable that connects the DIGITAL and ADDRESS Assys is in failure, the abnormality is associated with one address in most cases.
In most cases of damage on one line, the panel chassis must be replaced.
Failure analysis for the drive system ⇒ DR4
The abnormality is associated with a single scan line.
Diagnose the SCAN A and B Assys.
Is the waveform normal when the voltage is applied to the panel?
No
Is the cable connected properly to the 15-pin connector?
No
Connect the cable properly.
Yes
Yes
NG
Are the cables connected properly between the SCAN A and B Assys?
No
Reconnect the cables properly.
Yes
NG
Yes
Is the waveform of the SCAN IC control signal from the Y DRIVE Assy normal?
No
Replace the Y DRIVE Assy.
Replace the SCAN IC.
NG
Replace the panel chassis.
Failure analysis for the drive system ⇒ DR5
The panel mask is not displayed properly.
Check with the slanting ramp mask that moves.
Yes
Failure analysis for the drive system ⇒ DR2

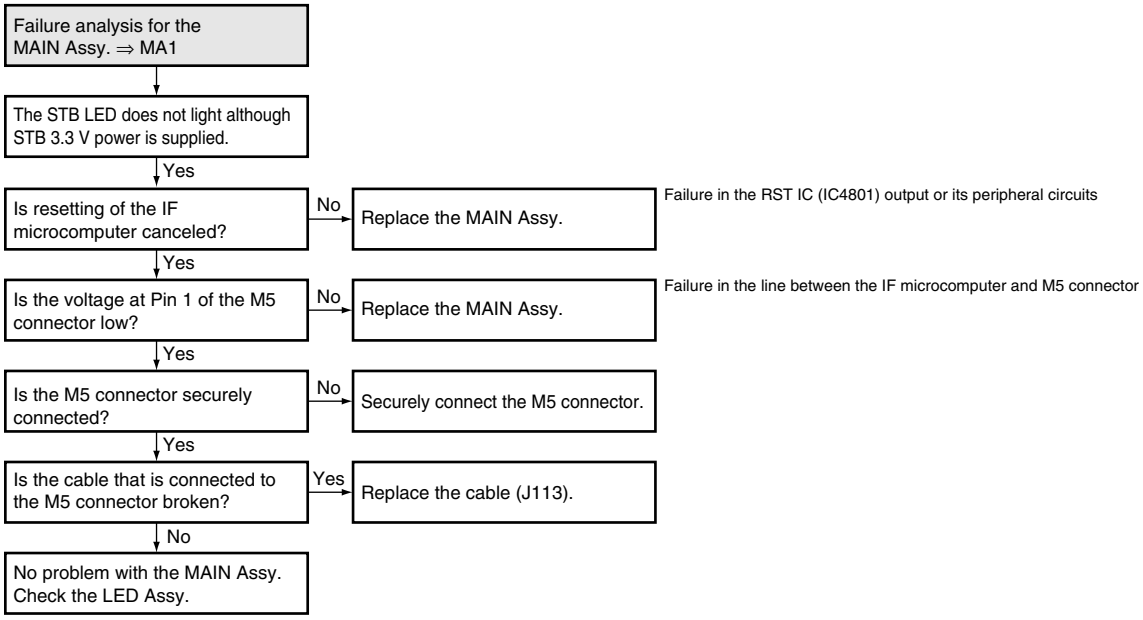
5.1.4 FLOWCHART OF FAILURE ANALYSIS FOR THE DIGITAL ASSY

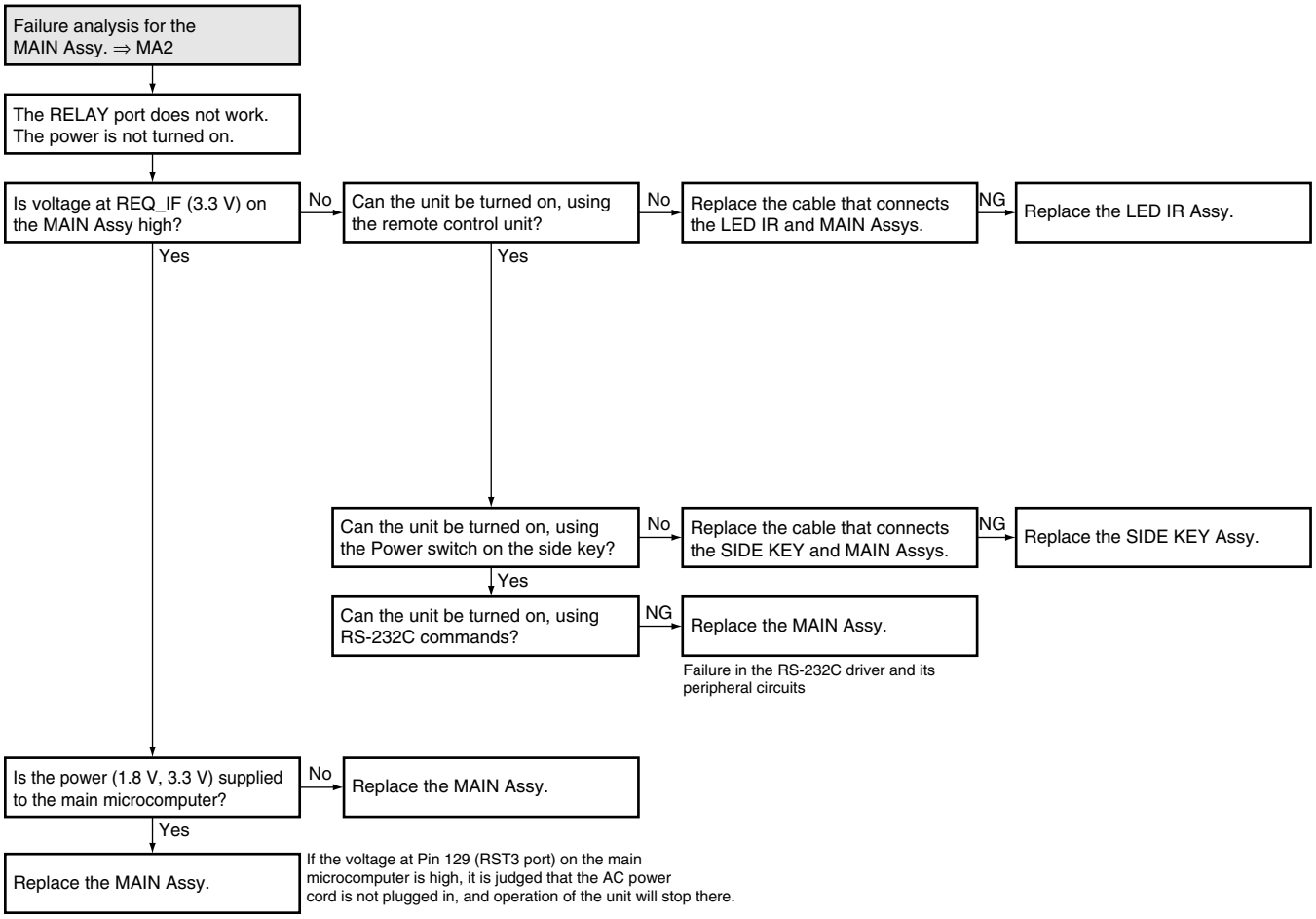
Flowchart of Failure Analysis for The DIGITAL Assy


Failure analysis for the DIGITAL Assy ⇒ DG1
The on-screen display (OSD) is not properly indicated.
• If the OSD is not properly displayed although the panel mask is properly displayed, a failure exists in the path from the output of IC8201 on the MAIN Assy to IC3401 on the DIGITAL Assy.
→ If only the OSD is abnormal, the MAIN Assy is in failure.
Is V sync/H existence judgment detected by issuing the QSI command?
No
Is the sync signal properly output from the MAIN Assy?
No
Replace the MAIN Assy.
Yes
If neither the V frequency nor H existence judgment is inappropriate, it is most likely that the output from the DIGITAL Assy is in free run and that the screen only displays reset lighting.
(It is judged that the drive, POWER SUPPLY Unit and the panel are normal.)
Yes
No
Is the 50-pin FFC cable firmly connected?
No
Firmly connect the 50-pin FFC cable.
Yes
When disconnecting the FFC cable, take care not to damage the CN3001 connector on the DIGITAL Assy, which can easily be damaged.
Is the 50-pin FFC cable broken?
No
Replace the 50-pin FFC cable.
Yes
In a case of D11
Is the FFC connector poorly contacted?
No
Replace the DIGITAL Assy.
Yes
DIGITAL : D11
MAIN : M1
In a case of M1
Replace the MAIN Assy.
Replace the MAIN Assy.
Is the indication position correct?
No
It is most likely that the sync signal is abnormal.
Yes
Is the tone correct?
No
It is most likely that the video signal data are missing.
Yes
Replace the MAIN Assy.

5.1.5 FLOWCHART OF FAILURE ANALYSIS FOR THE MAIN ASSY

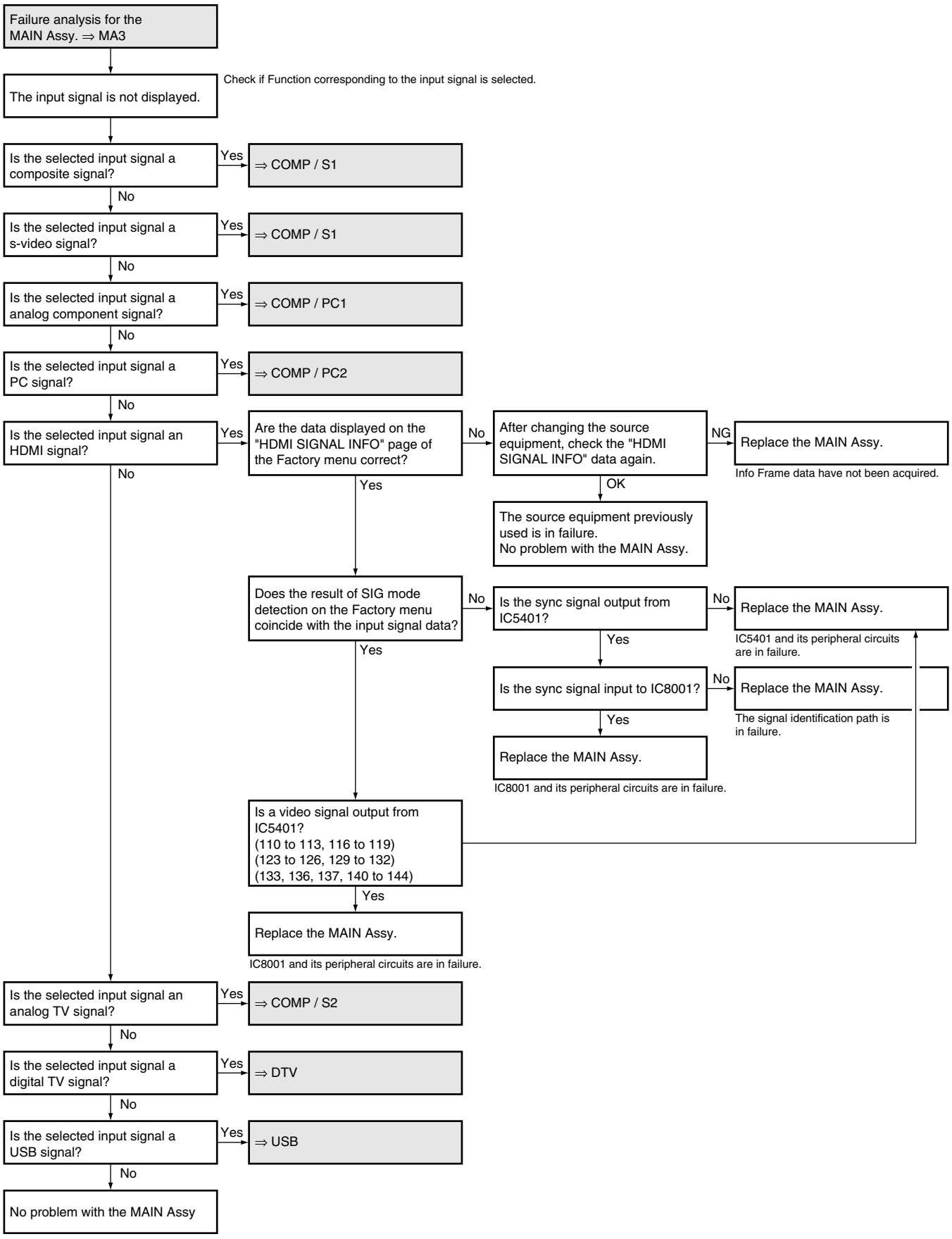
Flowchart of Failure Analysis for The MAIN Assy


Failure analysis for the MAIN Assy. ⇒ MA1
The STB LED does not light although STB 3.3 V power is supplied.
Yes
Is resetting of the IF microcomputer canceled?
No
Replace the MAIN Assy.
Failure in the RST IC (IC4801) output or its peripheral circuits
Yes
Is the voltage at Pin 1 of the M5 connector low?
No
Replace the MAIN Assy.
Failure in the line between the IF microcomputer and M5 connector
Yes
Is the M5 connector securely connected?
No
Securely connect the M5 connector.
Yes
Is the cable that is connected to the M5 connector broken?
Yes
Replace the cable (J113).
No
No problem with the MAIN Assy. Check the LED Assy.


Failure analysis for the MAIN Assy. ⇒ MA2
The RELAY port does not work. The power is not turned on.
Is voltage at REQ_IF (3.3 V) on the MAIN Assy high?
No
Can the unit be turned on, using the remote control unit?
No
Replace the cable that connects the LED IR and MAIN Assys.
NG
Replace the LED IR Assy.
Yes
Yes
Can the unit be turned on, using the Power switch on the side key?
No
Replace the cable that connects the SIDE KEY and MAIN Assys.
NG
Replace the SIDE KEY Assy.
Yes
Can the unit be turned on, using RS-232C commands?
NG
Replace the MAIN Assy.
Failure in the RS-232C driver and its peripheral circuits
Is the power (1.8 V, 3.3 V) supplied to the main microcomputer?
No
Replace the MAIN Assy.
Yes
Replace the MAIN Assy.
If the voltage at Pin 129 (RST3 port) on the main microcomputer is high, it is judged that the AC power cord is not plugged in, and operation of the unit will stop there.

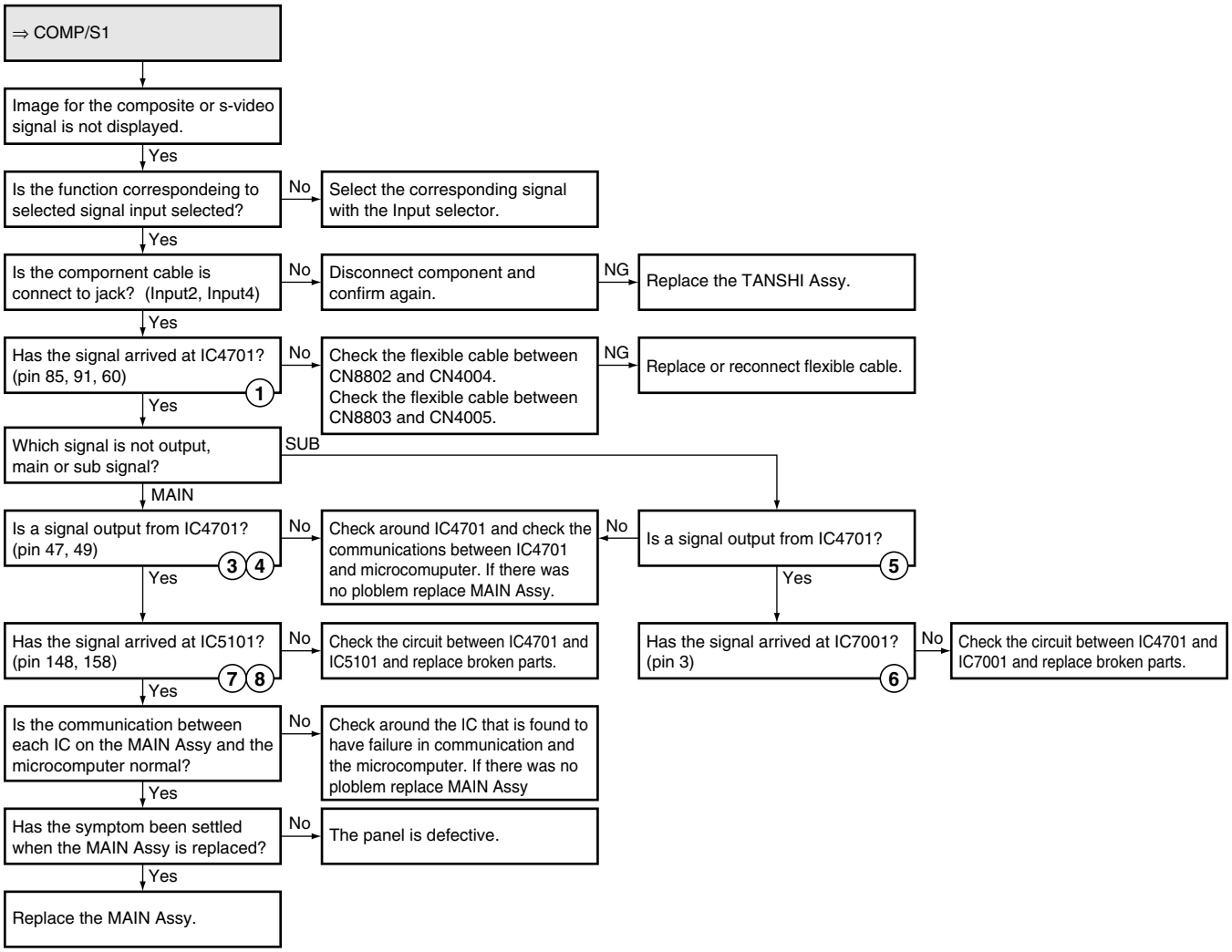
5.1.6 FLOWCHART OF FAILURE ANALYSIS FOR THE VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System


Failure analysis for the MAIN Assy. ⇒ MA3
The input signal is not displayed.
Check if Function corresponding to the input signal is selected.
Is the selected input signal a composite signal?
Yes
⇒ COMP / S1
No
Is the selected input signal a s-video signal?
Yes
⇒ COMP / S1
No
Is the selected input signal a analog component signal?
Yes
⇒ COMP / PC1
No
Is the selected input signal a PC signal?
Yes
⇒ COMP / PC2
No
Is the selected input signal an HDMI signal?
Yes
Are the data displayed on the "HDMI SIGNAL INFO" page of the Factory menu correct?
No
After changing the source equipment, check the "HDMI SIGNAL INFO" data again.
NG
Replace the MAIN Assy.
Info Frame data have not been acquired.
OK
The source equipment previously used is in failure.
No problem with the MAIN Assy.
Yes
No
Does the result of SIG mode detection on the Factory menu coincide with the input signal data?
No
Is the sync signal output from IC5401?
No
Replace the MAIN Assy.
IC5401 and its peripheral circuits are in failure.
Yes
Is the sync signal input to IC8001?
No
Replace the MAIN Assy.
The signal identification path is in failure.
Yes
Replace the MAIN Assy.
IC8001 and its peripheral circuits are in failure.
Yes
Is a video signal output from IC5401?
(110 to 113, 116 to 119)
(123 to 126, 129 to 132)
(133, 136, 137, 140 to 144)
Yes
Replace the MAIN Assy.
IC8001 and its peripheral circuits are in failure.
Is the selected input signal an analog TV signal?
Yes
⇒ COMP / S2
No
Is the selected input signal a digital TV signal?
Yes
⇒ DTV
No
Is the selected input signal a USB signal?
Yes
⇒ USB
No
No problem with the MAIN Assy

Flowchart of Failure Analysis for The Video System

No video from composite or S-VIDEO


⇒ COMP/S1
Image for the composite or s-video signal is not displayed.
Yes
Is the function correspondeing to selected signal input selected?
No
Select the corresponding signal with the Input selector.
Yes
Is the compornent cable is connect to jack? (Input2, Input4)
No
Disconnect component and confirm again.
NG
Replace the TANSHI Assy.
Yes
Has the signal arrived at IC4701? (pin 85, 91, 60)
1
No
Check the flexible cable between CN8802 and CN4004. Check the flexible cable between CN8803 and CN4005.
NG
Replace or reconnect flexible cable.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4701? (pin 47, 49)
3 4
No
Check around IC4701 and check the communications between IC4701 and microcomuputer. If there was no ploblem replace MAIN Assy.
No
Is a signal output from IC4701?
5
Yes
Yes
Has the signal arrived at IC5101? (pin 148, 158)
7 8
No
Check the circuit between IC4701 and IC5101 and replace broken parts.
Has the signal arrived at IC7001? (pin 3)
6
No
Check the circuit between IC4701 and IC7001 and replace broken parts.
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

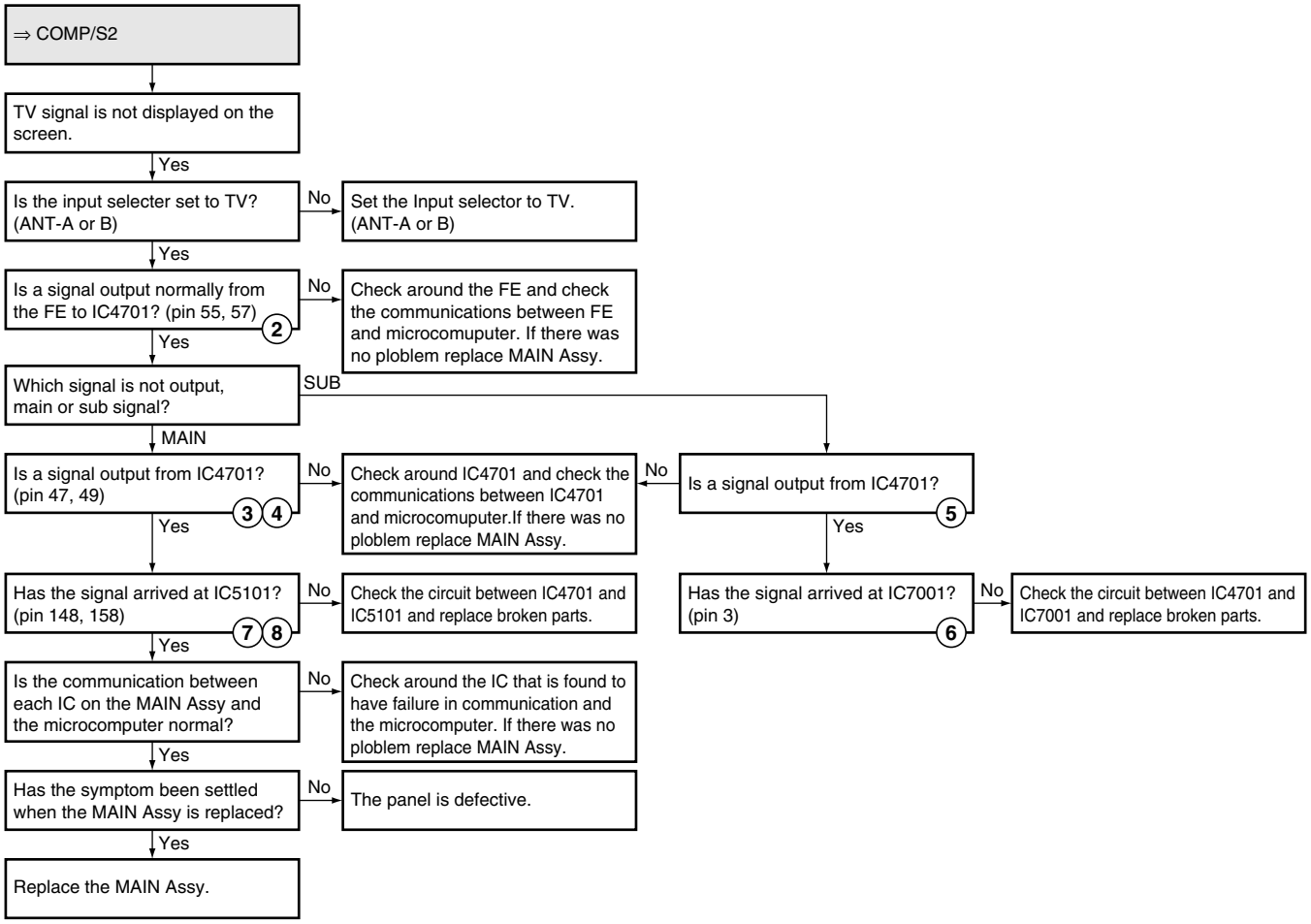
● Waveforms

Input signal: Color-bar

① **IC4701 - pin 85, 91, 60** V: 500 mV/div H: 20 µsec/div		③ **IC4701 - pin 47 (s-video)** V: 500 mV/div H: 20 µsec/div	④ **IC4701 - pin 49 (composite)** V: 500 mV/div H: 20 µsec/div	④ **IC4701 - pin 49 (s-video)** V: 500 mV/div H: 20 µsec/div
⑤ **IC4701 - pin 45 (composite)** V: 500 mV/div H: 20 µsec/div	⑥ **IC7001 - pin 3 (composite)** V: 500 mV/div H: 20 µsec/div	⑦ **IC5101 - pin 148 (composite)** V: 500 mV/div H: 20 µsec/div	⑦ **IC5101 - pin 148 (s-video)** V: 500 mV/div H: 20 µsec/div	⑧ **IC5101 - pin 158 (s-video)** V: 500 mV/div H: 20 µsec/div

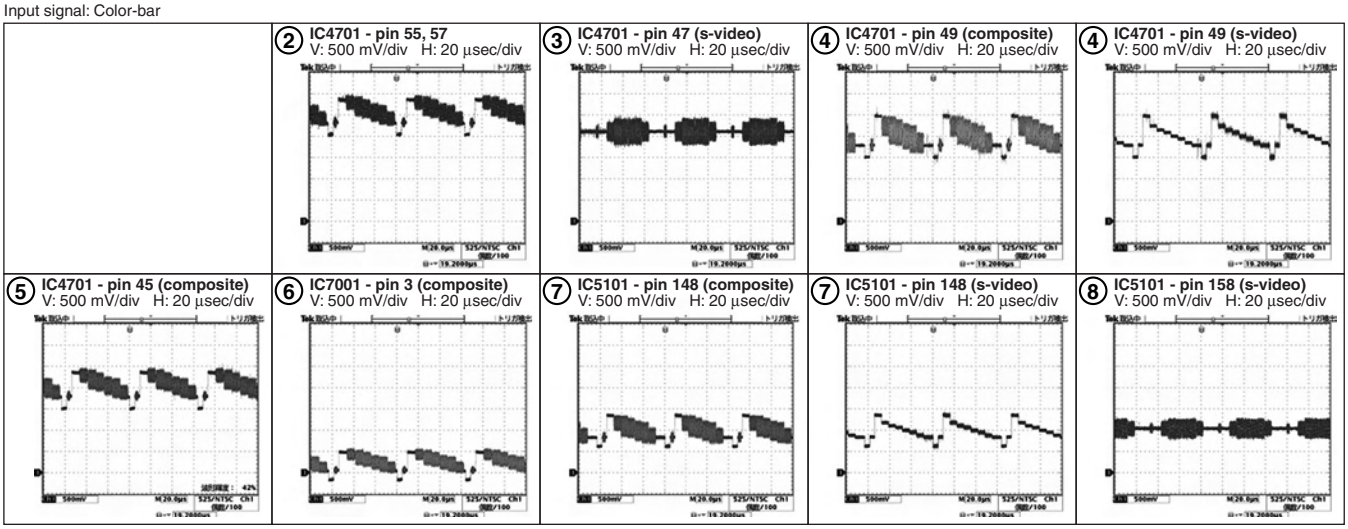
Flowchart of Failure Analysis for The Video System

No video from TV signal


⇒ COMP/S2
TV signal is not displayed on the screen.
Yes
Is the input selecter set to TV? (ANT-A or B)
No
Set the Input selector to TV. (ANT-A or B)
Yes
Is a signal output normally from the FE to IC4701? (pin 55, 57)
2
No
Check around the FE and check the communications between FE and microcomuputer. If there was no ploblem replace MAIN Assy.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4701? (pin 47, 49)
3 4
No
Check around IC4701 and check the communications between IC4701 and microcomuputer.If there was no ploblem replace MAIN Assy.
Yes
Is a signal output from IC4701?
5
No
Yes
Has the signal arrived at IC5101? (pin 148, 158)
7 8
No
Check the circuit between IC4701 and IC5101 and replace broken parts.
Yes
Has the signal arrived at IC7001? (pin 3)
6
No
Check the circuit between IC4701 and IC7001 and replace broken parts.
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

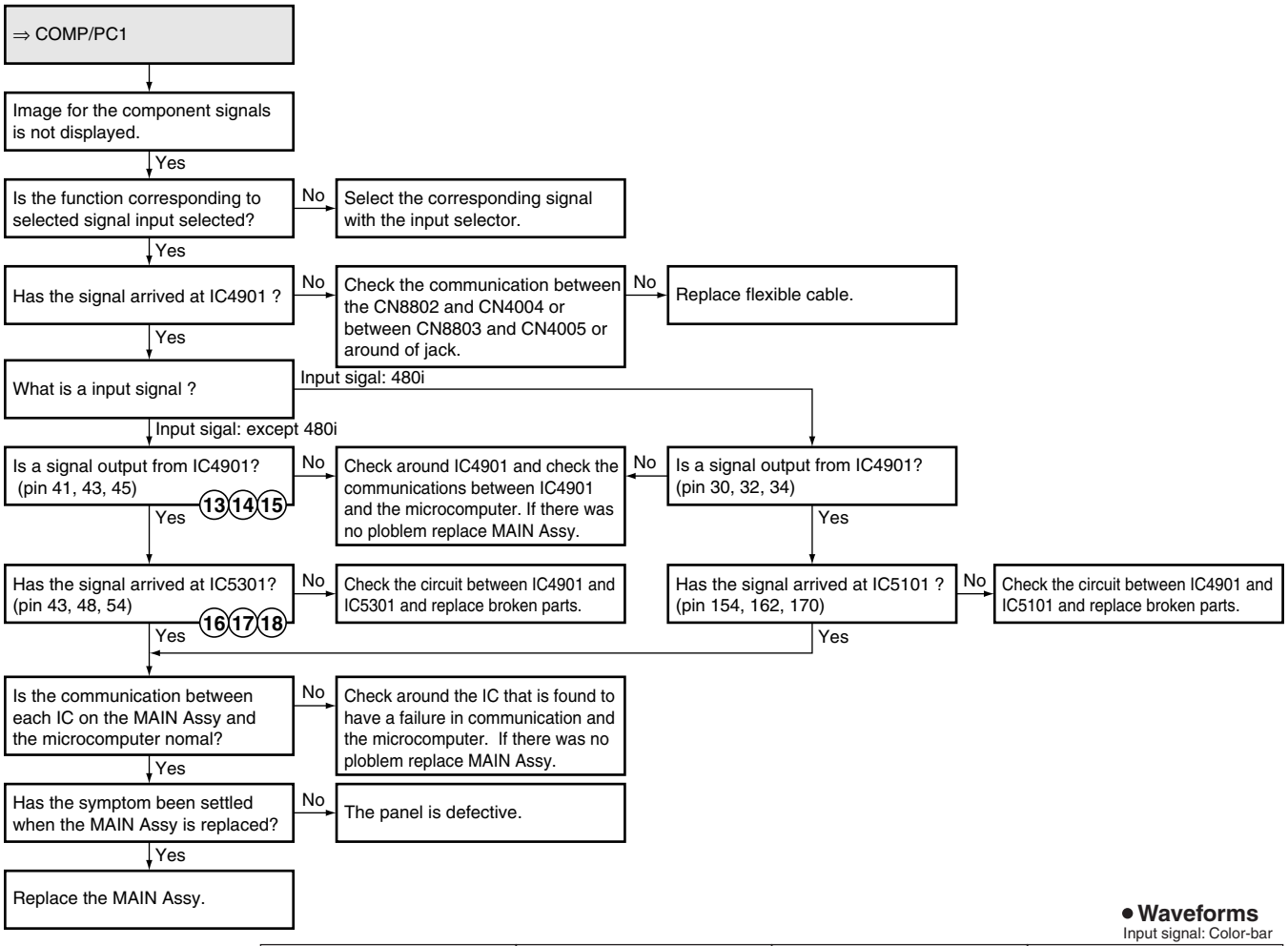
● Waveforms

Input signal: Color-bar


② IC4701 - pin 55, 57
V: 500 mV/div H: 20 µsec/div
③ IC4701 - pin 47 (s-video)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (composite)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (s-video)
V: 500 mV/div H: 20 µsec/div
⑤ IC4701 - pin 45 (composite)
V: 500 mV/div H: 20 µsec/div
⑥ IC7001 - pin 3 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (s-video)
V: 500 mV/div H: 20 µsec/div
⑧ IC5101 - pin 158 (s-video)
V: 500 mV/div H: 20 µsec/div

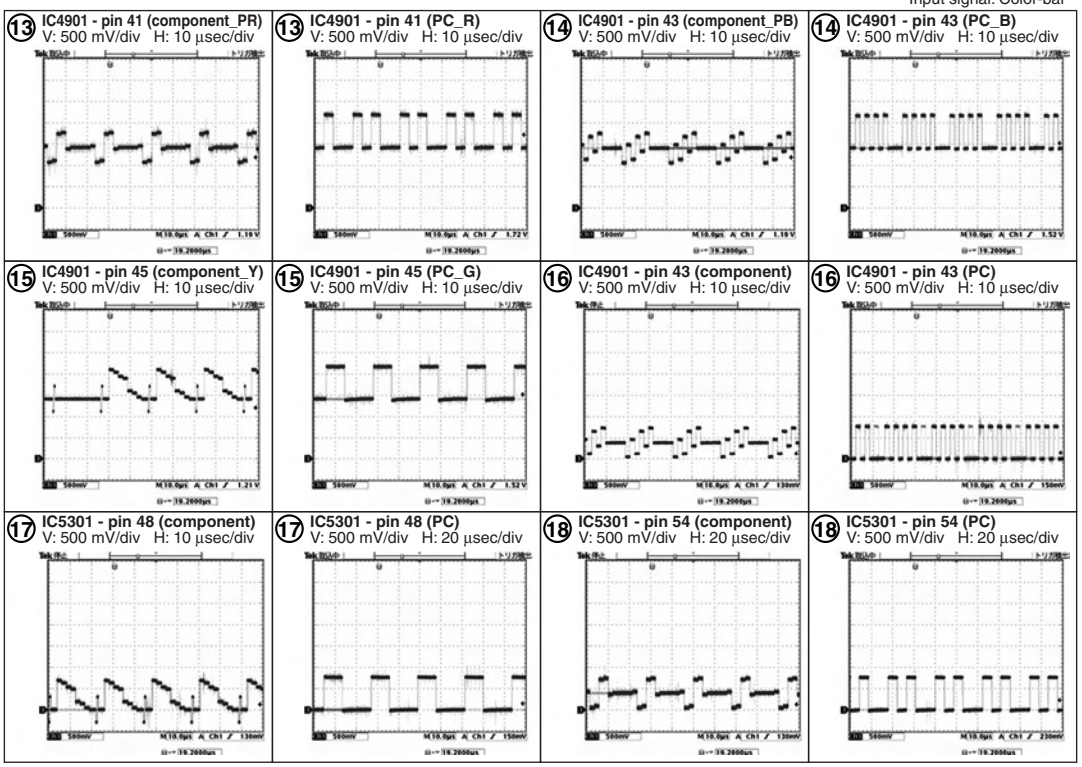
Flowchart of Failure Analysis for The Video System

No video from component


⇒ COMP/PC1
Image for the component signals is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC4901 ?
No
Check the communication between the CN8802 and CN4004 or between CN8803 and CN4005 or around of jack.
No
Replace flexible cable.
Yes
What is a input signal ?
Input sigal: 480i
Input sigal: except 480i
Is a signal output from IC4901? (pin 41, 43, 45)
13 14 15
No
Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace MAIN Assy.
No
Is a signal output from IC4901? (pin 30, 32, 34)
Yes
Yes
Has the signal arrived at IC5301? (pin 43, 48, 54)
16 17 18
No
Check the circuit between IC4901 and IC5301 and replace broken parts.
Yes
Has the signal arrived at IC5101 ? (pin 154, 162, 170)
No
Check the circuit between IC4901 and IC5101 and replace broken parts.
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar


13 IC4901 - pin 41 (component_PR)
V: 500 mV/div H: 10 µsec/div
13 IC4901 - pin 41 (PC_R)
V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (component_PB)
V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (PC_B)
V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (component_Y)
V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (PC_G)
V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (component)
V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (PC)
V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (component)
V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (PC)
V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (component)
V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (PC)
V: 500 mV/div H: 20 µsec/div

Flowchart of Failure Analysis for The Video System

No video from PC

⇒ COMP/PC2

Image for the PC signal is not displayed.

Yes

Is the function corresponding to selected signal input selected?
- No → Select the corresponding signal with the input selector.

Yes

Has the signal arrived at IC4901? (pin 8, 10, 12) ⑩⑪⑫
- No → Check the communication between the CN9003 and CN4013 and around IC4901.
  - No → Replace flexible cable.

Yes

Is a signal output from IC4901? (pin 41, 43, 45) ⑬⑭⑮
- No → Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace MAIN Assy.

Yes

Has the signal arrived at IC5301? (pin 43, 48, 54) ⑯⑰⑱
- No → Check the circuit between IC4901 and IC5301 and replace broken parts.

Yes

Is the communication between each IC on the MAIN Assy and the microcomputer nomal?
- No → Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.

Yes

Has the symptom been settled when the MAIN Assy is replaced?
- No → The panel is defective.

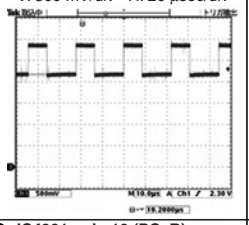
Yes

Replace the MAIN Assy.

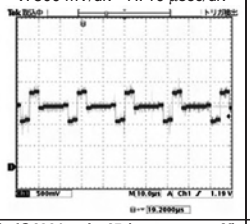
● Waveforms

Input signal: Color-bar

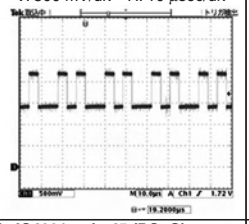
⑩ **IC4901 - pin 8 (PC_G)** V: 500 mV/div H: 20 µsec/div



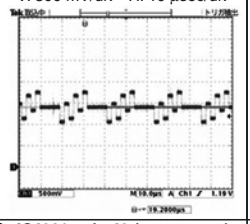
⑬ **IC4901 - pin 41 (component_PR)** V: 500 mV/div H: 10 µsec/div



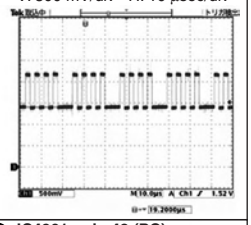
⑬ **IC4901 - pin 41 (PC_R)** V: 500 mV/div H: 10 µsec/div



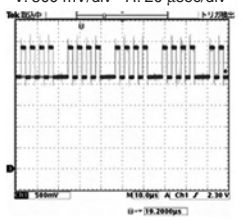
⑭ **IC4901 - pin 43 (component_PB)** V: 500 mV/div H: 10 µsec/div



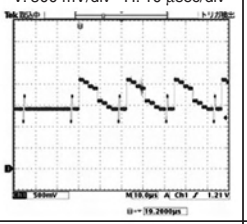
⑭ **IC4901 - pin 43 (PC_B)** V: 500 mV/div H: 10 µsec/div



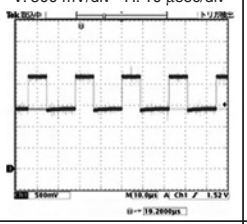
⑪ **IC4901 - pin 10 (PC_B)** V: 500 mV/div H: 20 µsec/div



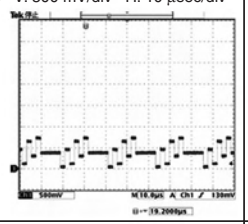
⑮ **IC4901 - pin 45 (component_Y)** V: 500 mV/div H: 10 µsec/div



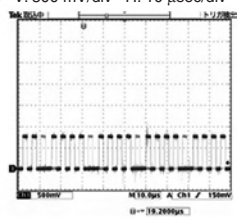
⑮ **IC4901 - pin 45 (PC_G)** V: 500 mV/div H: 10 µsec/div



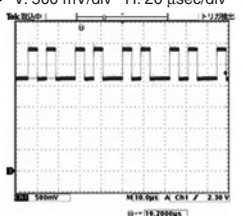
⑯ **IC4901 - pin 43 (component)** V: 500 mV/div H: 10 µsec/div



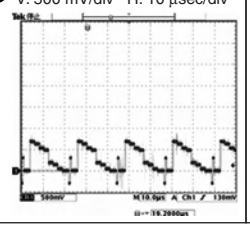
⑯ **IC4901 - pin 43 (PC)** V: 500 mV/div H: 10 µsec/div



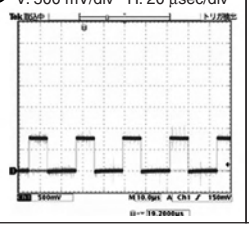
⑫ **IC4901 - pin 12 (PC_R)** V: 500 mV/div H: 20 µsec/div



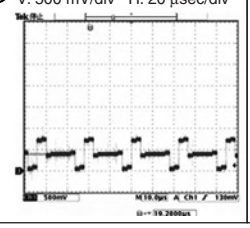
⑰ **IC5301 - pin 48 (component)** V: 500 mV/div H: 10 µsec/div



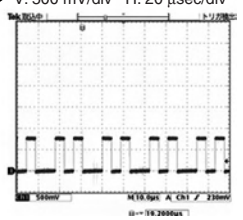
⑰ **IC5301 - pin 48 (PC)** V: 500 mV/div H: 20 µsec/div



⑱ **IC5301 - pin 54 (component)** V: 500 mV/div H: 20 µsec/div



⑱ **IC5301 - pin 54 (PC)** V: 500 mV/div H: 20 µsec/div



Flowchart of Failure Analysis for The Video System

No video from USB input

⇒ USB

The image of the USB card doesn't come out.

Yes

Has the function is selected Home Media Gallery by Home menu? — No → Select the input of specification by the input switch.

Yes

Is the contents list are appear? — No → Has USB memory or digital camerra is connected to USB connecter? — NG → Insert USB device such as USB flash memory.

Yes

Has the signal come to IC6301? — No → Check around USB connecter or USB cable and check between pin 2, 3 of CN7101 and pin 305, 406 of IC6301. — NG → Replace USB cable.

Yes

Is the signal from IC6301 to IC7201? — No → Check between IC6301 and IC7201. If there is no problem then replace IC6301.

Yes

Is the signal input from IC7201 to IC8001? — No → Check between IC7201 and IC8001. If there is no problem replace IC7201.

Yes

Has the symptom been settled when the MAIN Assy is replaced? — No → The panel is defective.

Yes

Replace the MAIN Assy.

No monitor output

⇒ MONI_V

MONITOR OUT image is not displayed.

Yes

Is a signal being input other than the component or RGB signal? — No → Only the component and RGB signals cannot be output from MONITOR OUT. Check the unit using either the component or RGB signal.

Yes

Has the signal arrived to IC4701? — No → Check the communication between the jack and IC4701. If there was no ploblem replace IO Assy.

Yes

Is a signal output from IC4701? (pin 79) (28) — No → Check around IC4701 and check the communications between IC4701 and the microcomputer. If there was no ploblem then replace MAIN Assy.

Yes

Is a signal arrived to CN8803? — No → Check the communication from IC4701 to CN4005. If there is no ploblem, check the Flexible cable between CN4005 and CN8803. — NG → Replace flexible cable.

Yes

Is a signal output from jack? (29) — No → Check the communication between the CN8803 and Jack. If there was no ploblem replace IO Assy.

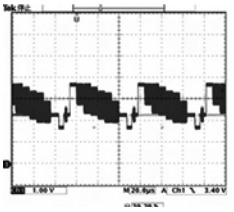
Yes

Finishing troubleshooting.

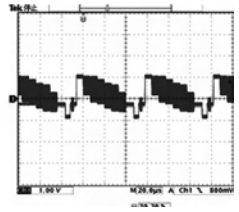
● **Waveforms**

Input signal: Color-bar

(28) **IC4701 - pin 79**
V: 1 V/div H: 20 µsec/div



(29) **R8801**
V: 1 V/div H: 20 µsec/div



5.1.7 FLOWCHART OF FAILURE ANALYSIS FOR THE AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System

No audio from monitor out

⇒ MONI_A

The sound is not emitted audio out.

Yes

Is a signal output from IC4701? (pin 33, 34) (30)
- No → Check the surrounding of IC4701 and each input signal. If there was no ploblem replace MAIN Assy.

Yes

Has the signal arrived at CN4005?
- No → Check the communication between IC4701 and CN4005.
  - NG → Replace the MAIN Assy.

Yes

Is a signal output from CN8803?
- No → Check the Flexible cable between CN4005 and CN8803.
  - NG → Replace or reconnect flexible cable.

Yes

Has the signal come to TP8825 or TP8826?
- No → Check the contact between the CN8803 and R8886. Check the contact between the CN8803 and R8887.
  - NG → Replace the TANSHI Assy.

Yes

Is a signal output from jack?
- No → Check the communication between the CN8803 and Jack. If there was no ploblem replace IO Assy.
  - NG → Replace the TANSHI Assy.

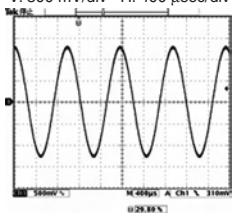
Yes

Finishing troubleshooting.

● Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.

(30) IC4701 - pin 33, 34 (AC)
V: 500 mV/div H: 400 µsec/div



No audio output from subwoofer

⇒ SUB-W

Has the sound been emitted from the Subwoofer?
- No → Cansel muting then check again.
  - No → Cansel muting then check again.
- Yes → Is the volume set to 0?
  - No → Raise the volume then check again.

Yes

Is a signal output from IC4701? (pin 31, 32) (31)
- No → Check the around of IC4701 and each input signal. If there was no ploblem, replace MAIN Assy.

Yes

Is a signal output from IC4704? (pin 1, 7) (32)
- No → Check around IC4704.
  - NG → Replace the MAIN Assy.

Yes

Has the signal arrived at CN4005?
- No → Check the communication between IC4704 to CN4005.
  - NG → Replace the MAIN Assy.

Yes

Is a signal output from CN8803?
- No → Check the Flexible cable between CN4005 and CN8803.
  - NG → Replace or reconnect flexible cable.

Yes

Has the signal come to TP8843?
- No → Check the contact between the CN8803 and R8892.
  - NG → Replace the TANSHI Assy.

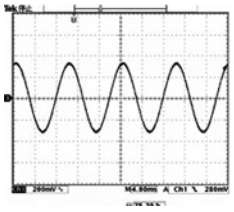
Yes

Check the around of pin Jack.

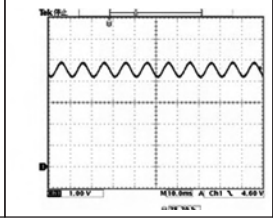
● Waveforms

Input signal: 100 Hz
Sound volume is fixed to 25.

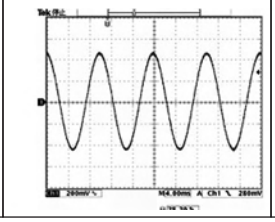
(31) IC4701 - pin 31, 32 (AC-SUBWOO)
V: 200 mV/div H: 4 msec/div



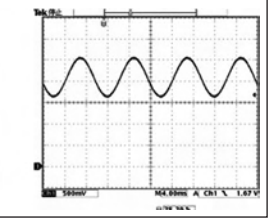
(31) IC4701 - pin 31, 32 (DC-SUBWOO)
V: 1 V/div H: 10 msec/div



(32) IC4704 - pin 1, 7 (AC-SUBWOO)
V: 200 mV/div H: 4 msec/div

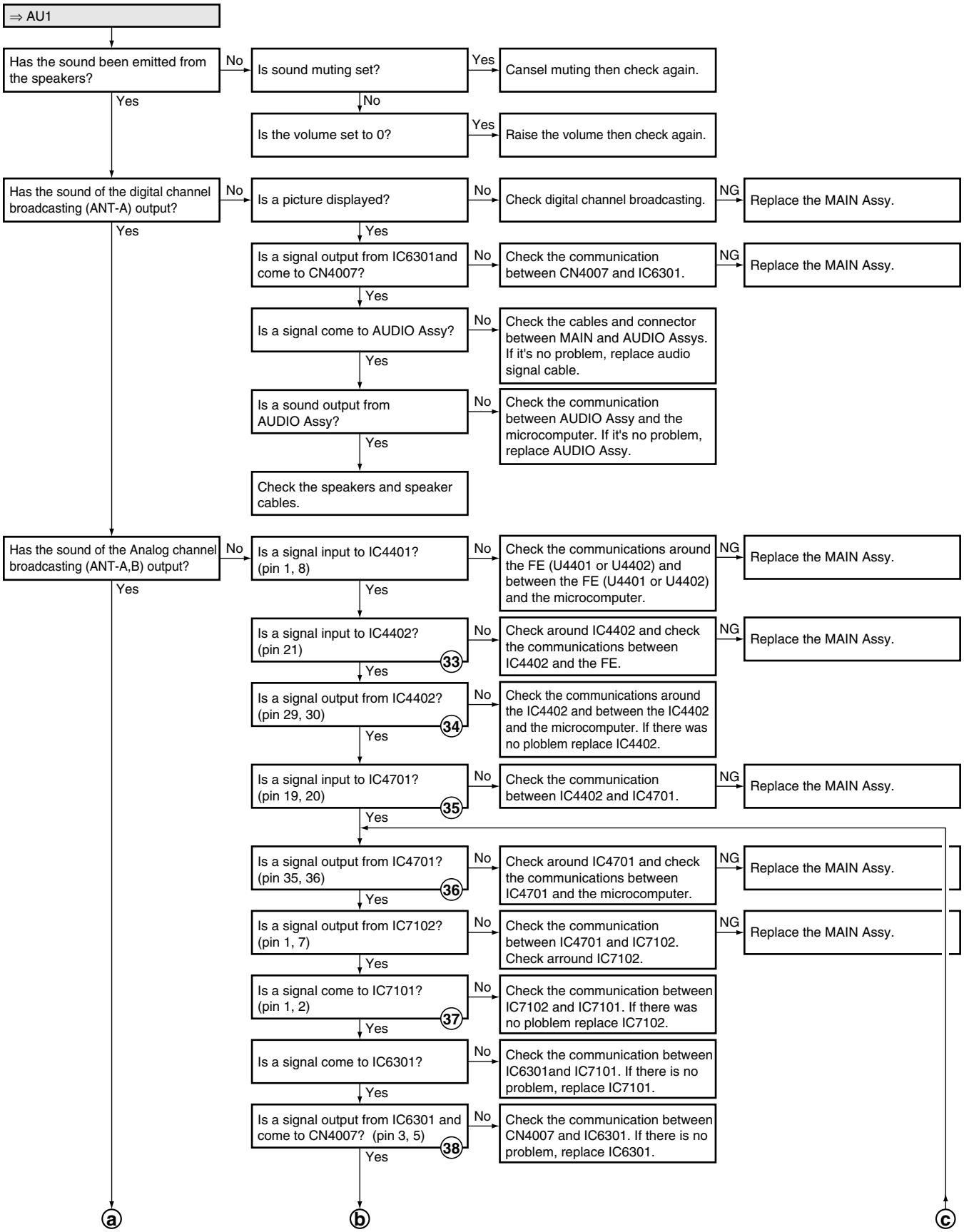


(32) IC4704 - pin 1, 7 (DC-SUBWOO)
V: 500 mV/div H: 4 msec/div

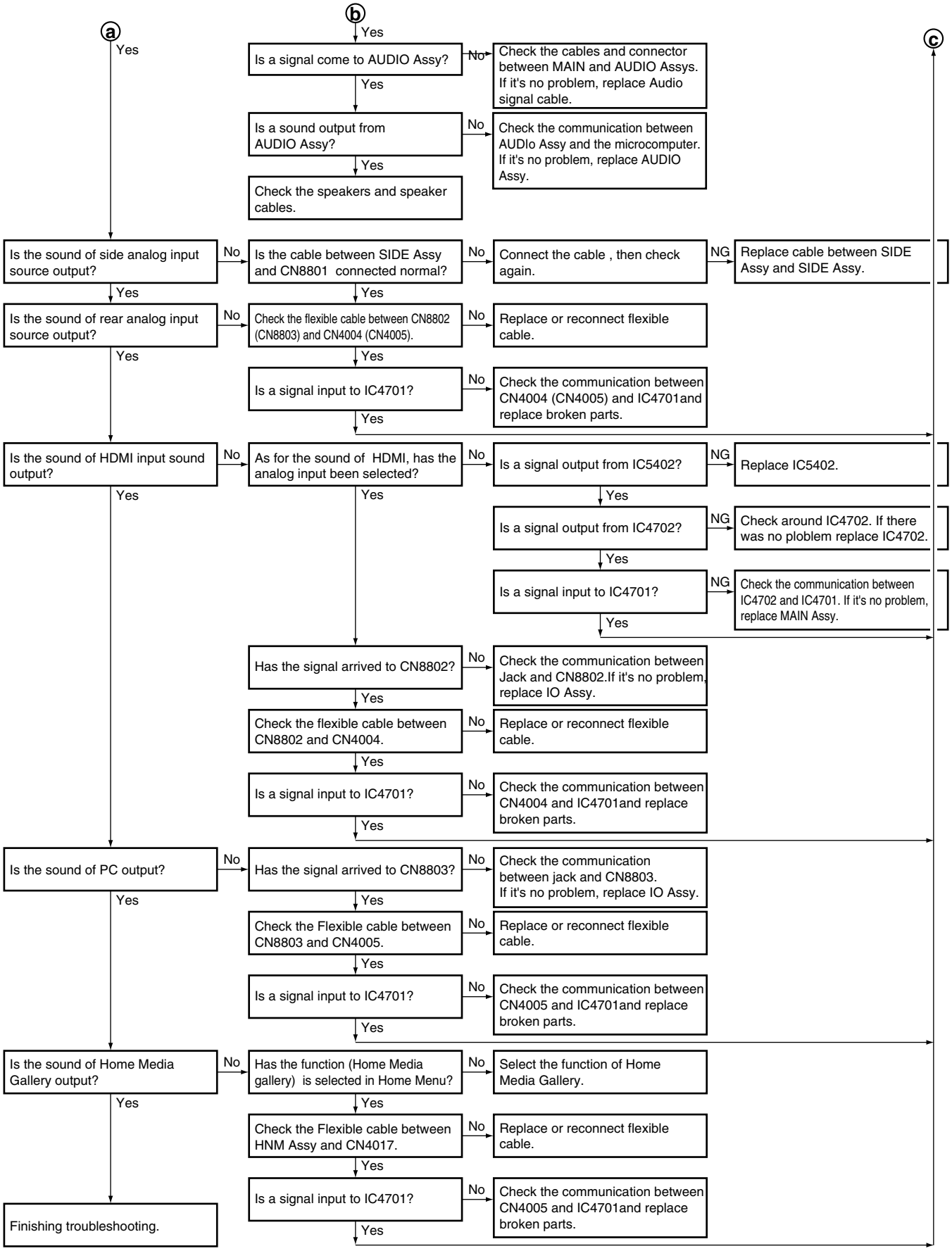


Flowchart of Failure Analysis for The Audio System

No sound from panel


⇒ AU1
Has the sound been emitted from the speakers?
No
Is sound muting set?
Yes
Cansel muting then check again.
Yes
No
Is the volume set to 0?
Yes
Raise the volume then check again.
Has the sound of the digital channel broadcasting (ANT-A) output?
No
Is a picture displayed?
No
Check digital channel broadcasting.
NG
Replace the MAIN Assy.
Yes
Yes
Is a signal output from IC6301and come to CN4007?
No
Check the communication between CN4007 and IC6301.
NG
Replace the MAIN Assy.
Yes
Is a signal come to AUDIO Assy?
No
Check the cables and connector between MAIN and AUDIO Assys. If it's no problem, replace audio signal cable.
Yes
Is a sound output from AUDIO Assy?
No
Check the communication between AUDIO Assy and the microcomputer. If it's no problem, replace AUDIO Assy.
Yes
Check the speakers and speaker cables.
Has the sound of the Analog channel broadcasting (ANT-A,B) output?
No
Is a signal input to IC4401? (pin 1, 8)
No
Check the communications around the FE (U4401 or U4402) and between the FE (U4401 or U4402) and the microcomputer.
NG
Replace the MAIN Assy.
Yes
Is a signal input to IC4402? (pin 21)
33
No
Check around IC4402 and check the communications between IC4402 and the FE.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC4402? (pin 29, 30)
34
No
Check the communications around the IC4402 and between the IC4402 and the microcomputer. If there was no ploblem replace IC4402.
Yes
Is a signal input to IC4701? (pin 19, 20)
35
No
Check the communication between IC4402 and IC4701.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC4701? (pin 35, 36)
36
No
Check around IC4701 and check the communications between IC4701 and the microcomputer.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC7102? (pin 1, 7)
No
Check the communication between IC4701 and IC7102. Check arround IC7102.
NG
Replace the MAIN Assy.
Yes
Is a signal come to IC7101? (pin 1, 2)
37
No
Check the communication between IC7102 and IC7101. If there was no ploblem replace IC7102.
Yes
Is a signal come to IC6301?
No
Check the communication between IC6301and IC7101. If there is no problem, replace IC7101.
Yes
Is a signal output from IC6301 and come to CN4007? (pin 3, 5)
38
No
Check the communication between CN4007 and IC6301. If there is no problem, replace IC6301.
Yes
a
b
c

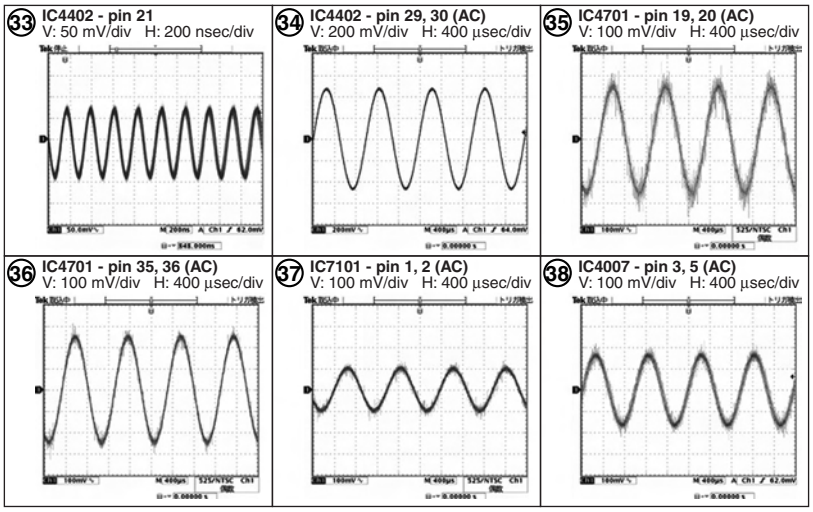
Flowchart of Failure Analysis for The Audio System


a
b
c
Yes
Is a signal come to AUDIO Assy?
No
Check the cables and connector between MAIN and AUDIO Assys. If it's no problem, replace Audio signal cable.
Is a sound output from AUDIO Assy?
Check the communication between AUDIo Assy and the microcomputer. If it's no problem, replace AUDIO Assy.
Check the speakers and speaker cables.
Is the sound of side analog input source output?
Is the cable between SIDE Assy and CN8801 connected normal?
Connect the cable , then check again.
NG
Replace cable between SIDE Assy and SIDE Assy.
Is the sound of rear analog input source output?
Check the flexible cable between CN8802 (CN8803) and CN4004 (CN4005).
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4004 (CN4005) and IC4701and replace broken parts.
Is the sound of HDMI input sound output?
As for the sound of HDMI, has the analog input been selected?
Is a signal output from IC5402?
Replace IC5402.
Is a signal output from IC4702?
Check around IC4702. If there was no ploblem replace IC4702.
Is a signal input to IC4701?
Check the communication between IC4702 and IC4701. If it's no problem, replace MAIN Assy.
Has the signal arrived to CN8802?
Check the communication between Jack and CN8802.If it's no problem, replace IO Assy.
Check the flexible cable between CN8802 and CN4004.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4004 and IC4701and replace broken parts.
Is the sound of PC output?
Has the signal arrived to CN8803?
Check the communication between jack and CN8803. If it's no problem, replace IO Assy.
Check the Flexible cable between CN8803 and CN4005.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4005 and IC4701and replace broken parts.
Is the sound of Home Media Gallery output?
Has the function (Home Media gallery) is selected in Home Menu?
Select the function of Home Media Gallery.
Check the Flexible cable between HNM Assy and CN4017.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4005 and IC4701and replace broken parts.
Finishing troubleshooting.

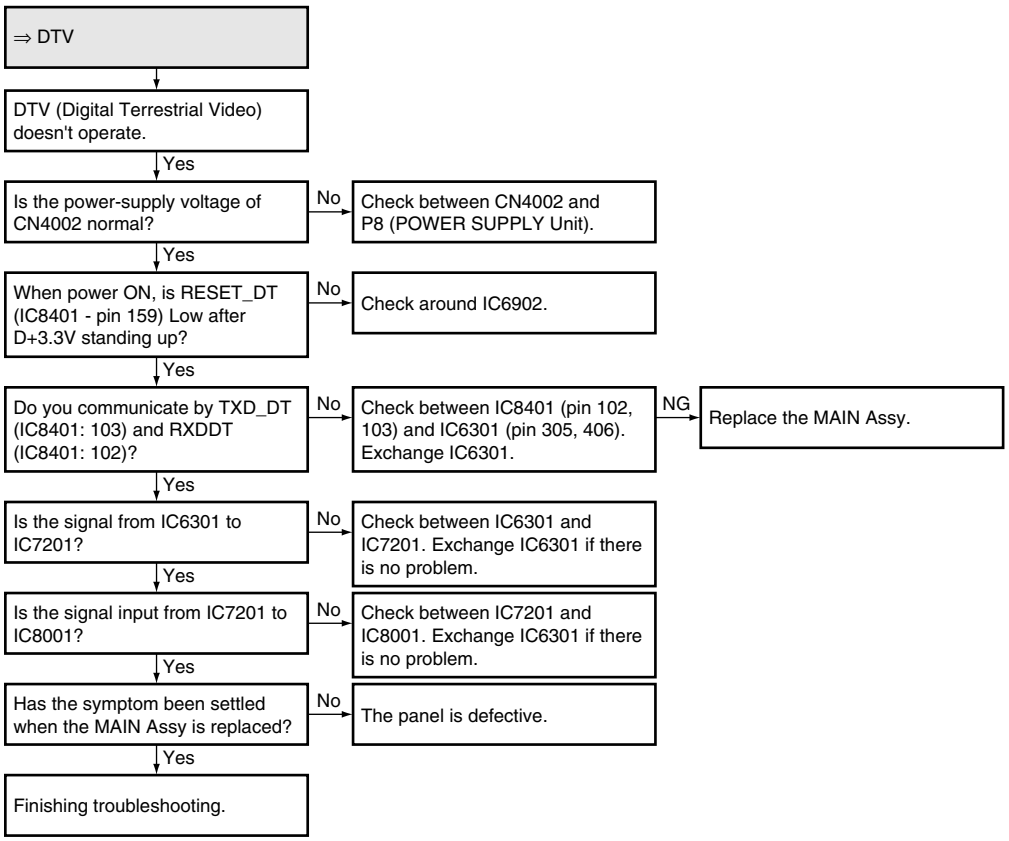
Flowchart of Failure Analysis for The Audio System

● Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.

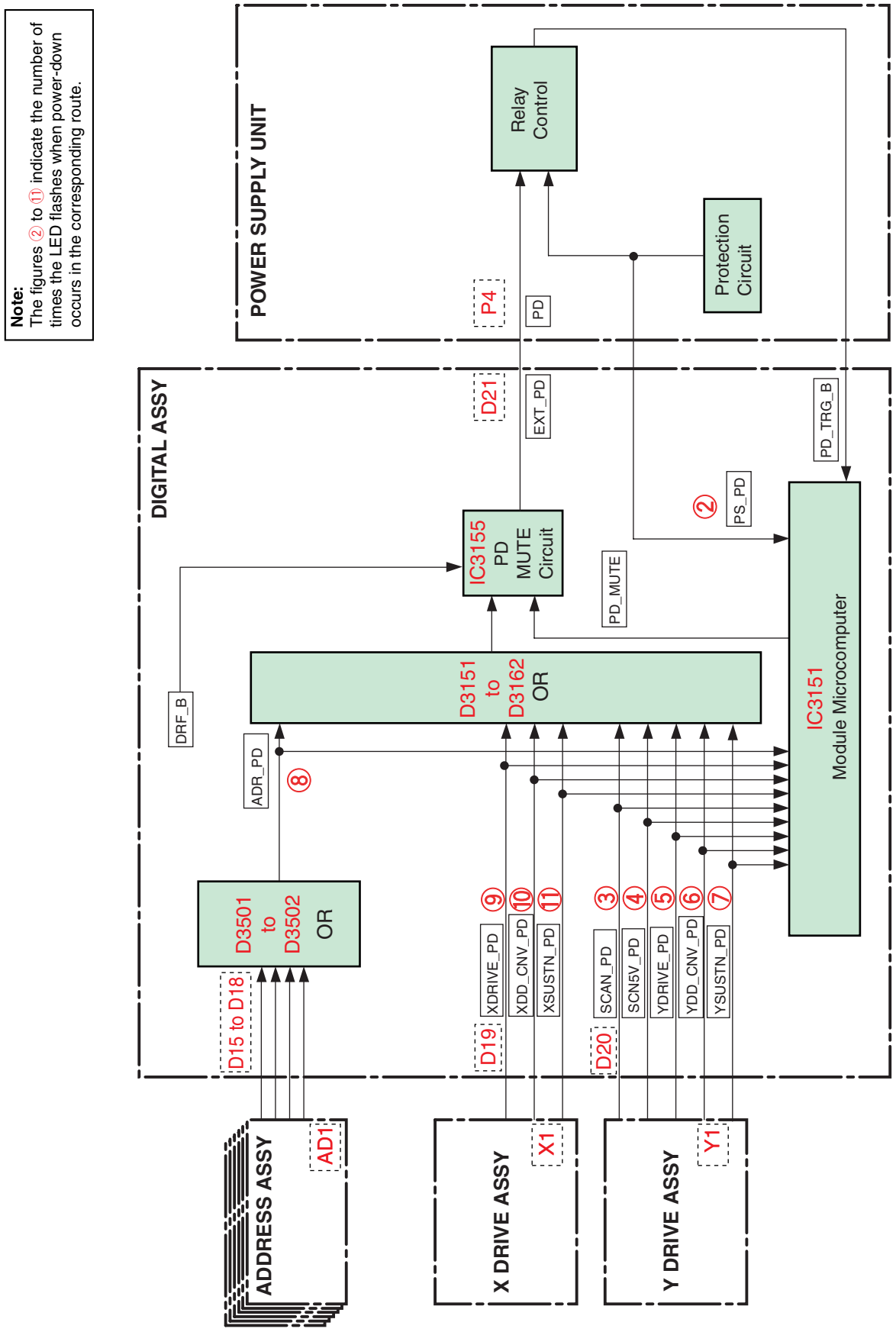

33 IC4402 - pin 21
V: 50 mV/div H: 200 nsec/div
34 IC4402 - pin 29, 30 (AC)
V: 200 mV/div H: 400 µsec/div
35 IC4701 - pin 19, 20 (AC)
V: 100 mV/div H: 400 µsec/div
36 IC4701 - pin 35, 36 (AC)
V: 100 mV/div H: 400 µsec/div
37 IC7101 - pin 1, 2 (AC)
V: 100 mV/div H: 400 µsec/div
38 IC4007 - pin 3, 5 (AC)
V: 100 mV/div H: 400 µsec/div

DTV doesn't work


⇒ DTV
DTV (Digital Terrestrial Video) doesn't operate.
Yes
Is the power-supply voltage of CN4002 normal?
No
Check between CN4002 and P8 (POWER SUPPLY Unit).
Yes
When power ON, is RESET_DT (IC8401 - pin 159) Low after D+3.3V standing up?
No
Check around IC6902.
Yes
Do you communicate by TXD_DT (IC8401: 103) and RXDDT (IC8401: 102)?
No
Check between IC8401 (pin 102, 103) and IC6301 (pin 305, 406). Exchange IC6301.
NG
Replace the MAIN Assy.
Yes
Is the signal from IC6301 to IC7201?
No
Check between IC6301 and IC7201. Exchange IC6301 if there is no problem.
Yes
Is the signal input from IC7201 to IC8001?
No
Check between IC7201 and IC8001. Exchange IC6301 if there is no problem.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting.

5.2 DIAGNOSIS OF PD (POWER-DOWN)

5.2.1 BLOCK DIAGRAM OF THE POWER DOWN SIGNAL



5.2.2 PD (POWER DOWN) DIAGNOSIS

■ Prediction of failure symptoms when a PD (power-down) is generated

LED Flashing Count	PD Circuit	Checkpoint	Main Cause
2	Power supply PD	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit
3	SCAN PD	SCAN A, B Assy	SCAN IC is damaged (short-circuiting between VH and GNDH)
		Y DRIVE Assy	Connectors disconnected between the POWER SUPPLY Unit and the Y DRIVE Assy Connectors disconnected between the DIGITAL and the Y DRIVE Assys Failure in the VH power
4	IC5V PD	SCAN A, B Assy	SCAN IC is damaged (short-circuiting between IC5V and GNDH)
			Disconnection of the scan-bridge (15-pin) connector
		Y DRIVE Assy	Failure in the photo coupler
			Abnormality in the IC5V DC/DC converter
5	Y-DRIVE PD	Y DRIVE Assy	Abnormality in the 16.5 V power
6	Y DCDC PD	Y DRIVE Assy	Abnormality in the VOFS DC/DC converter
			Abnormality in the VPRST DC/DC converter
			Abnormality in VC_15V DC/DC converter
7	Y SUS PD	Y DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
8	Address PD	ADDRESS Assy	Short-circuiting of Vadr TCP damaged
9	X-DRIVE PD	X DRIVE Assy	Connectors disconnected between the DIGITAL and the X DRIVE Assys
			Abnormality in the 16.5 V power
10	X DCDC PD	X DRIVE Assy	Abnormality in VC_15V power
			Abnormality in VXNRST power
11	X SUS PD	X DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
			Connectors disconnected between the POWER SUPPLY Unit and the X DRIVE Assy

■ How to distinguish which connector is disconnected

Assy	Connector	To which Assy the Connector is Connected	Frequency of LED Flashing	Screen Display
X DRIVE Assy	CN1001	DIGITAL Assy	11 (XDRIVE)	–
	CN1201	POWER SUPPLY Unit (ADR system power)	–	White (left half of the screen)
	CN1201	POWER SUPPLY Unit (drive system power)	12 (X-SUS)	–
	CN1203	ADDRESS Assy	8 (ADR)	–
Y DRIVE Assy	CN2001	DIGITAL Assy	3 (SCAN)	–
	CN2350	POWER SUPPLY Unit (drive system power)	3 (SCAN)	–
	CN2350	POWER SUPPLY Unit (ADR system power)	–	White (right half of the screen)
	CN2351, CN2352	ADDRESS Assy	8 (ADR)	–
	CN2401, CN2402	SCAN A, B Assy	4 (SCN-5V)	–
SCAN A, B Assy	CN2701, CN2801	Y DRIVE Assy	4 (SCN-5V)	–
ADDRESS Assy	CN1501	DIGITAL Assy	8 (ADRS)	–
	CN1502, CN1502	X DRIVE Assy, Y DRIVE Assy	8 (ADRS)	–

■ How to identify the cause of a power-down that is indicated by 2-times flashing of the red LED

The cause of a power-down that is indicated by 2-times flashing of the red LED can be identified by performing the steps ① to ③ below:
① Visual check with the power off
② Tester check with the power off
③ Check with the power on

① Status check with the power off

Check if the cables and FFC cables that are connected to the Y DRIVE Assy are firmly connected.

② Tester check with the power off

1. Check between Vsus and SUSGND with a tester

Disconnect all cables from the X and Y DRIVE Assys and check if there is short-circuiting between Vsus and SUSGND in the X and Y DRIVE Assys.

- How to check if there is short-circuiting on the X DRIVE Assy:
  If there is short-circuiting between Vsus and SUS OUT, and SUS OUT and SUSGND, the X Mask Module is damaged.
  If they are not short-circuited, check other elements to see if they are short-circuited.

- How to check if there is short-circuiting on the Y DRIVE Assy:
  If there is short-circuiting between Vsus and SUS OUT, and SUS OUT and SUSGND, the Y Mask Module is damaged.
  If they are not short-circuited, check other elements to see if they are short-circuited.

- Check for short-circuiting in the Power supply.

Note that at the beginning of measuring with a tester, charging of an electrolytic capacitor may cause a phenomenon like short-circuiting. However, the resistance will soon rise if there is no short-circuiting.

2. Check for short-circuiting between VH and PSUS with a tester

Disconnect the cables that connect the bridge connectors between the Y DRIVE Assy and upper and lower SCAN Assys.

- If there is short-circuiting in the upper SCAN Assy, one of Scan ICs in the upper SCAN Assy is damaged.
- If there is short-circuiting in the lower SCAN Assy, one of Scan ICs in the lower SCAN Assy is damaged.
- If there is short-circuiting in the Y DRIVE Assy, a circuit in the Y DRIVE Assy is short-circuited.

If no short-circuiting is detected up to this stage, the power-down in question is proved not to be caused by short-circuiting. Therefore, it is assumed that the power-down occurred because power had not been supplied to Vsus or VH for some reason.

③ Check immediately after the unit is turned on before a power-down occurs.

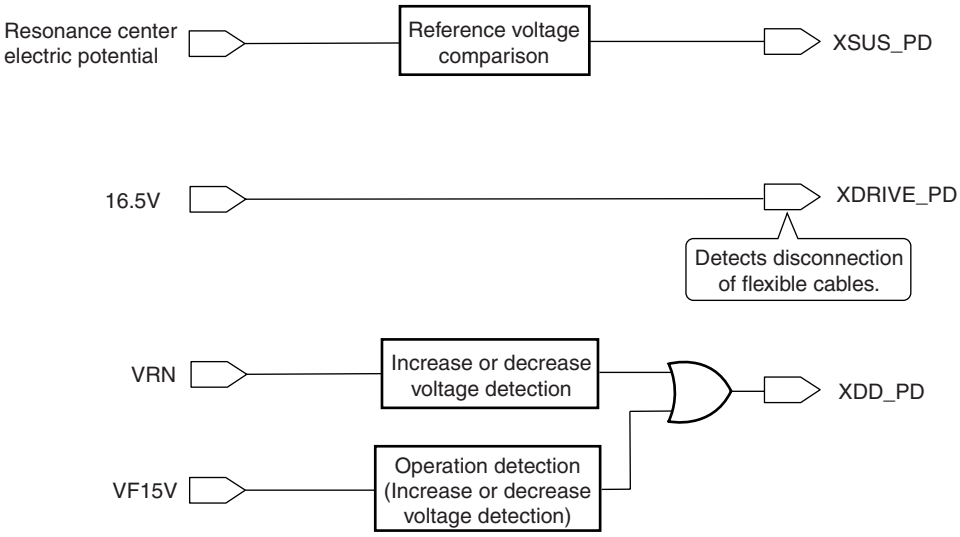
If the Vsus voltage does not increase, the POWER SUPPLY Unit is in failure.
If the VH voltage does not increase, the VH DC/DC converter in the Y DRIVE Assy is in failure.

④ Check the PD detection circuit.

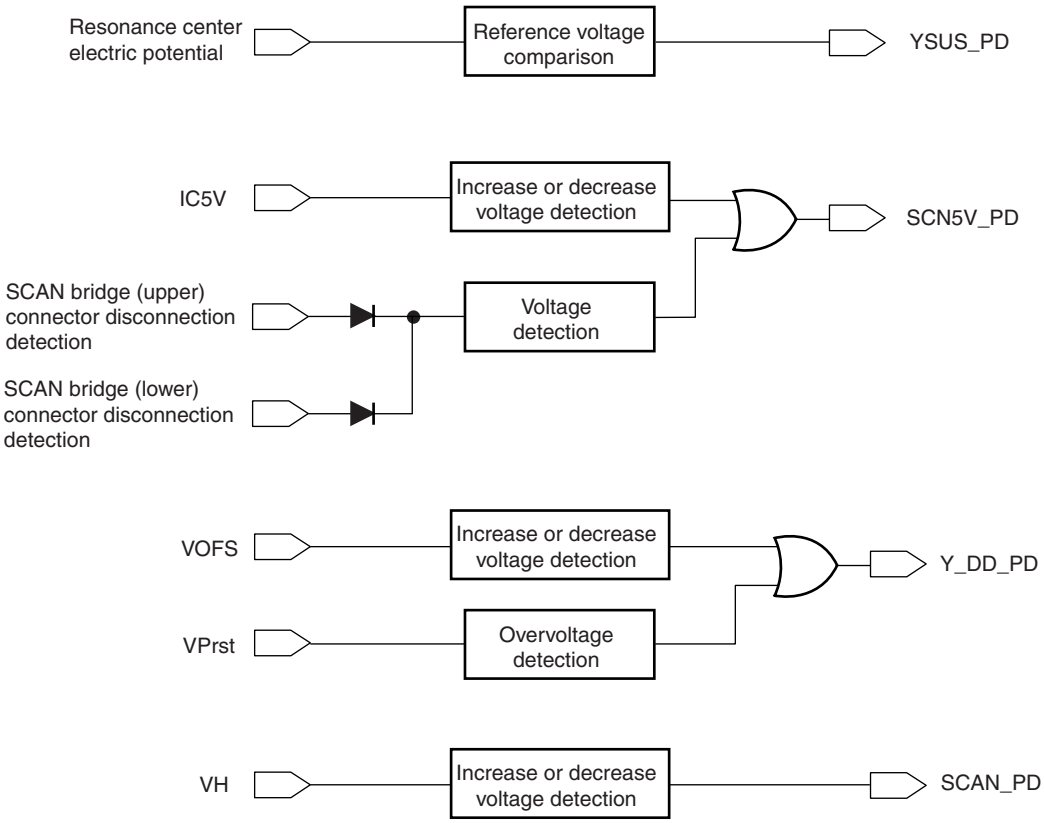
If no problem is detected in steps ① to ③, a power-down occurred even though the voltage was normal.
Therefore, the PD detection circuit may be in failure.

By following the above procedures, the real cause of a power-down can be judged.

X Drive PD system

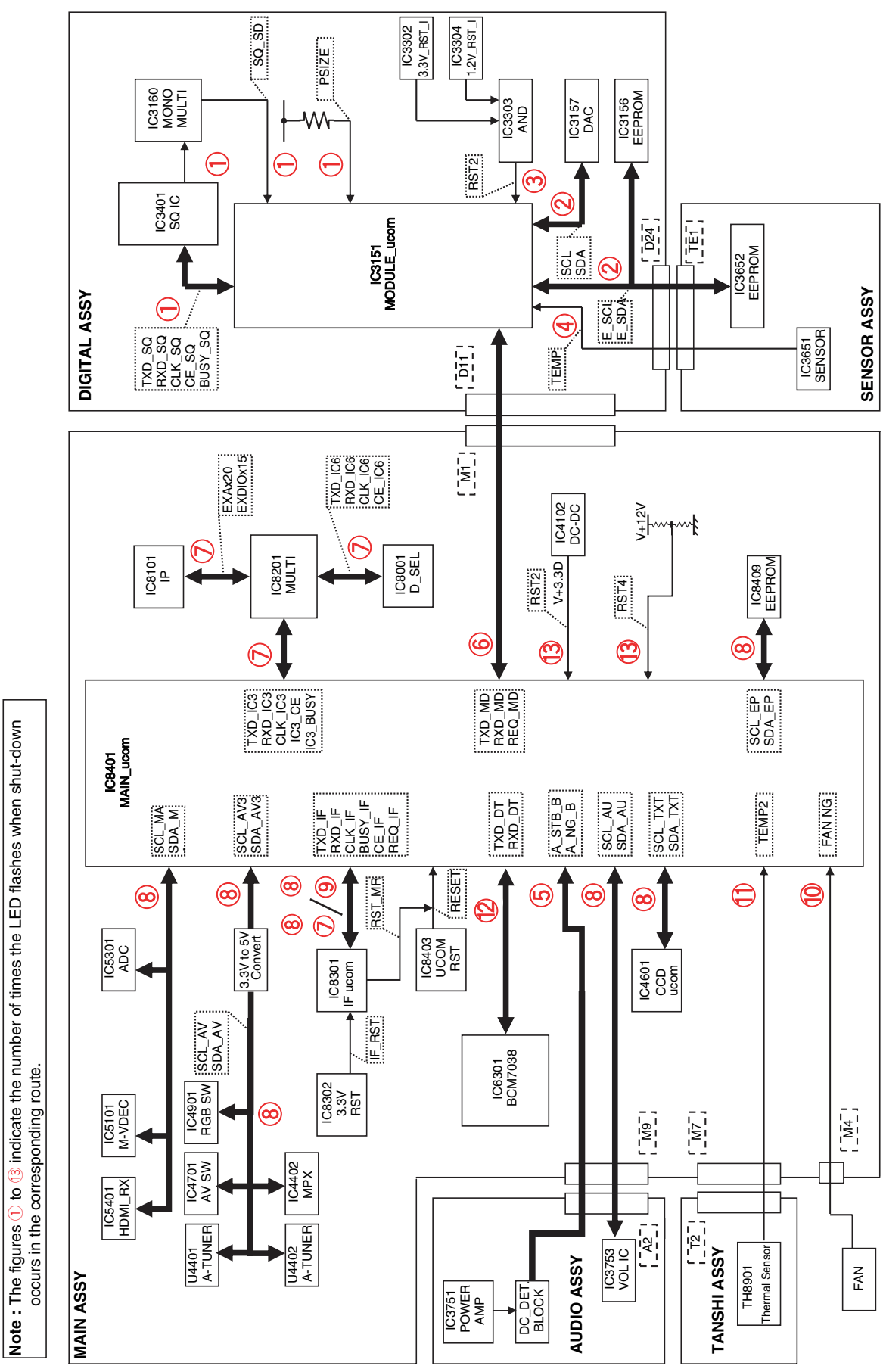


Y Drive PD system



5.3 DIAGNOSIS OF SD (SHUTDOWN)

5.3.1 BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL



Note : The figures ① to ⑬ indicate the number of times the LED flashes when shut-down occurs in the corresponding route.

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 1	Abnormality in the Sequence Processor	Communication error	SQ-IC	RTRY	CLK_SQ/TXD_SQ, etc.	IC3151, IC3401	SQ_IC communication not established
		Drive stop		SQNO	Check if the video sync signal is input to IC3401.	CN3001, IC3401	If the signal detection by the module microcomputer is properly performed, the unit operates on an external sync.
		Busy		BUSY	BUSY_SQ	IC3401	If BUSY_SQ remains high, a shutdown is generated.
		Incoherent version (hardware, software)		VER-HS	Check the model number of the DIGITAL Assy and the destination of the sequence processor.	IC3301, IC3401	The written SQ_PROG is incoherent with data on the DIGITAL Assy.
Blue 2	Failure in IIC communication with the module microcomputer	DIGITAL Assy EEPROM	MD-IIC	EEPROM	IIC communication line of IC3156	IC3151, IC3156	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		SENSOR Assy EEPROM		BACKUP	IIC communication line of IC3652	IC3151, IC3652	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		DAC		DAC	IIC communication line of IC3157	IC3151, IC3157	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 3	Abnormality in RST2 power decrease	–	RST2	–	Is the output voltage of the DC-DC converter low?	AXY1135	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
					The 12 V power is not output.	POWER SUPPLY Unit	Check if V + 12 V is started.
Blue 4	High temperature of the panel	–	TMP_NG	TEMP1	Ambient temperature	–	If TEMP1 that is read by the module microcomputer is 75°C or higher, a shutdown will be generated.
					Abnormality in the panel temperature sensor	IC3651	Check the connection with the SENSOR Assy.
Blue 5	Short-circuiting of the speakers	–	AUDIO	–	Speaker terminals	CN3753, CN3901, JA3901	Check if any speaker cable is in contact with the chassis.
					AUDIO_AMP	IC3751	Check if the AMP output is short-circuited.
					Periphery of the cable between A2 and M8	CN3752, CN4007	Check if cables are firmly connected.
Blue 6	Failure in communication with the module microcomputer	–	MODULE	–	Communication line between MAIN and MOD	IC3151, IC8401	Check the communication lines (RXD_MOD/RXD_MOD/REQ_MOD).
					Periphery of the cable between D11 and M2	CN3001, CN4001	Check if cables are firmly connected.
Blue 7	Failure in main microcomputer 3-wire serial communication	IF microcomputer	MA-SRL	IF	Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
		MULTI		MULTI	Communication line between MULTI_M and MAIN	IC8201, IC8401	Check the communication lines (TXD_IC3/RXD_IC3/CLK_IC3/CE_IC3/IC3_BUSY).
				I/P	Bus communication line between IP and MULTI_M	IC8101, IC8201	Check the communication lines (EXA/EXDIO).
				D_SEL	Communication line between D_SEL and MULTI_M	IC8001, IC8201	Check the communication lines (TXD_IC6/RXD_IC6/CLK_IC6/CE_IC6).
Blue 8	Failure in IIC communication with the main microcomputer	AV Switch	MA-IIC	AV-SW	IIC communication line between AV_SW and MAIN	IC4701, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		RGB Switch		RGB-SW	IIC communication line between RGB_SW and MAIN	IC4901, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE1	IIC communication line between A_Tuner and MAIN	U4401, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE2	IIC communication line between A_Tuner and MAIN	U4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		MPX		MPX	IIC communication line between MPX and MAIN	IC4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Main VDEC		M-VDEC	IIC communication line between M_VDEC and MAIN	IC5101, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		AD/PLL		ADC	IIC communication line between ADC and MAIN	IC5301, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		HDMI		HDMI	IIC communication line between HDMI_RX and MAIN	IC5401, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		CCD		CCD	IIC communication line between CCD and MAIN	IC4601, IC8401	Check the communication lines (SCL_TXT/SDA_TXT).
		64K EEPROM		MA-EEP	IIC communication line between EEPROM and MAIN	IC8409, IC8401	Check the communication lines (SCL_EP/SDA_EP).
		VOLUME IC		AUDIO	IIC communication line between VOL_IC and MAIN	IC3753, IC8401	Check the communication lines (SCL_AUDIO/SDA_AUDIO).
		VOLUME IC		AUDIO	Periphery of the cable between A2 and M9	CN3752, CN4007	Check if cables are firmly connected.
Blue 9	Failure in communication with the main microcomputer and unknown	–	MAIN	–	Communication line between IF and MAIN	IC8301, IC8303, IC8304, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
Blue 10	Failure in the fan	–	FAN	–	Dirt attached to the fan motor	–	Check the fan.
					Periphery of the cable between fan and M4	CN4009	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC8407	–
Blue 11	High temperature of the unit	–	TEMP2	–	Temperature sensor or its periphery	–	A shutdown is generated if TEMP2 becomes higher than 53°C
					Periphery of the temperature sensor	TH8901, Q8901	TEMP2
					Periphery of the cable between T2 and M7	CN8802, CN4004	Check if cables are firmly connected.
Blue 12	Digital Tuner	–	DTUNER	PS/RST	Startup of IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				DEVICE	Communication line between MAIN and IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				TV-G	Startup of the TV-GUIDE application	IC6301	Check startup of the TV-GUIDE application. (*)
				HOME-G	Startup of the HOME-G application	IC6301	Check BCM7038 and its peripheral devices.
Blue 13	Failure in the POWER SUPPLY Unit	DC-DC converter power decrease	MA-PWR	M-DCDC	DC-DC converter or its periphery, RST2	IC4102, Q4106	Check if V + 3.3 V is started.
		POWER SUPPLY		RELAY	The 12 V power is not output, RST4	–	Check if V + 12 V is started.
					Periphery of the cable between P8 and M2	CN4002	Check if cables are firmly connected.

(*) : Check if it becomes banner display when switching channel.

5.4 NON-FAILURE SYMPTOMS

■ Information on symptoms that do not constitute failure

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 5 or 6 signal is not correct.	The color setting for INPUT 5 or 6 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 5 or 6 is not displayed, and a message is displayed.	A unsupported video signal is input. Example: 1080p @ 60Hz
The audio signal input to the INPUT 5 or 6 pin jack is not output.	The audio setting for INPUT 5 or 6 is "AUTO," and a video signal is not input. If the audio setting is "AUTO," to output an analog audio signal, the DVI signal must be input via a DVI-HDMI conversion cable. When the DVI equipment is connected, the analog signals are selected with the setting "AUTO."
No sound of signals to INPUT 5 or 6 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
MONITOR video output	
The video output signal from the MONITOR connector is deteriorated. Or when the video output signal from the MONITOR connector is recorded, its playback picture is deteriorated.	The video signal output from the MONITOR connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2, 3, or 4.	The video signal is not output from the MONITOR connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 5 or 6.	The video signal is not output from the MONITOR connector when the HDMI signal is selected.
MONITOR audio output	
The image displayed on the PDP is not synchronized with the sound from the MONITOR audio output.	The audio signal from the MONITOR connector is synchronized with the video output signal from the MONITOR connector.
DIGITAL audio output	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The video output signal from the DIGITAL connector is not synchronized with that from the MONITOR video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the MONITOR video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off function is effective only while a video signal is being input.
The no-operation off function is not activated.	The no-operation off function is effective only while a video signal is being input.
Power management does not function.	Power management is effective only while a signal is being input from a PC.
The AUTO SETUP function is not activated.	The AUTO SETUP function is effective only while a signal is being input from a PC.
The G-Link system is not activated.	Wrong connection of the cable to the SR connector or PC audio connector is suspected.
Control via the SR connector is not possible.	A failure in the G-Link system or wrong connection of the cable to the PC audio connector is suspected.
The audio signal from the PC is not output.	A failure in the G-Link system or wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON (default is OFF).
The display position of the screen slightly changes every time the unit is turned on.	The orbiter function for minimizing the effects of phosphor burn is activated. As ON/OFF of this function can only be changed on the Integrator menu, turning off of this function by a user is not possible.
The video signal to the S video connector is not displayed.	Although S video input is selected on the menu, the cable is connected via a component video input connector whose function type is the same as S video input.
The video signal to the composite video connector is not displayed.	Although the composite video input is selected on the menu, the cable is connected via a component video connector or S video connector whose function type is the same as the composite video input.

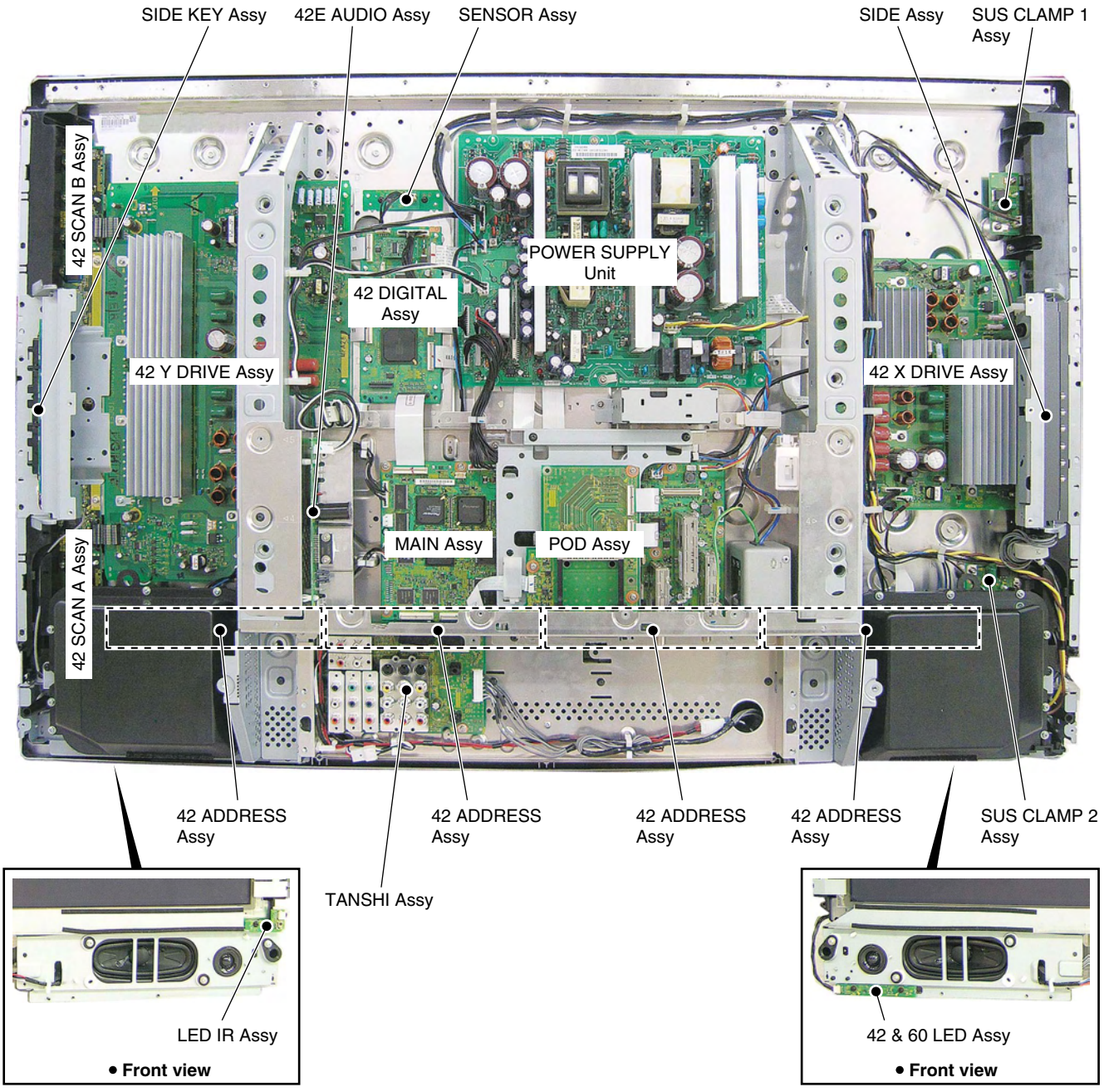
SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.
(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.
In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

6. DISASSEMBLY

6.1 PCB LOCATION

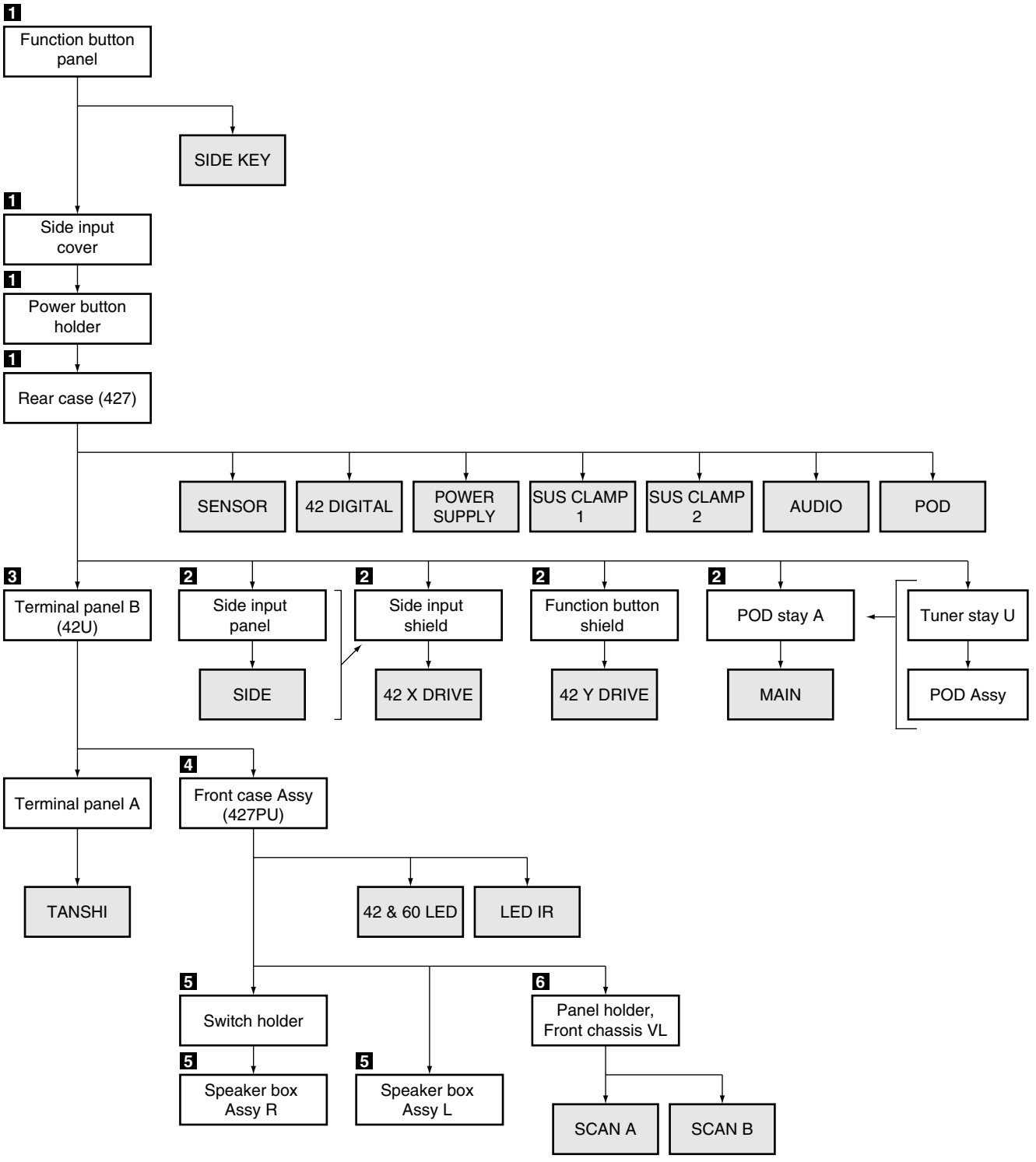


6.2 CHART OF REMOVAL ORDER FOR THE MAIN PARTS AND BOARDS

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Chart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

1 Rear Case (427)

● Function button panel

① Remove the two screws.

② Remove the function button panel.

● Side input cover

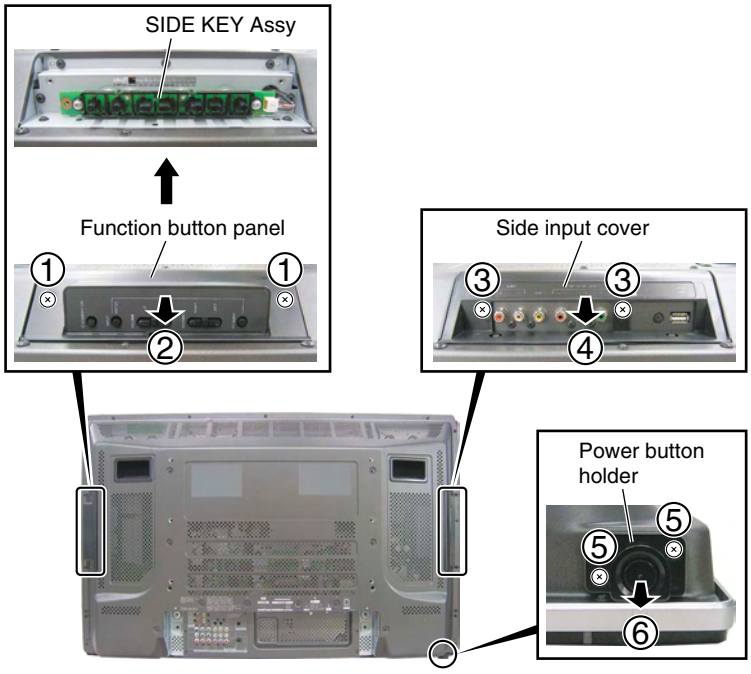
③ Remove the two screws.

④ Remove the side input cover.

● Power button holder

⑤ Remove the two screws.

⑥ Remove the power button holder.



● Rear case (427)

① Remove the 23 screws. (AMZ30P060FTB)

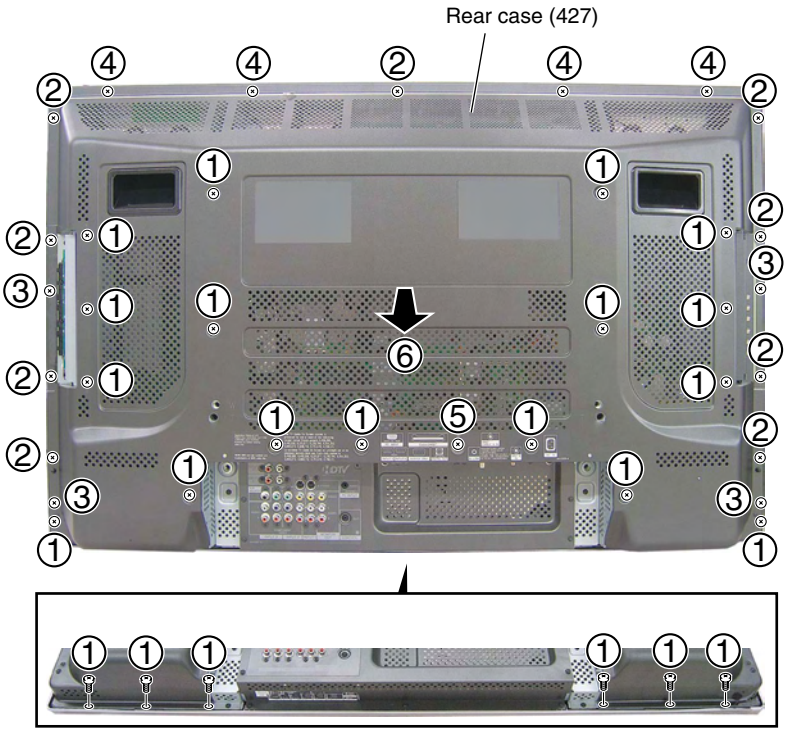
② Remove the nine screws. (TBZ40P080FTB)

③ Remove the four screws. (ABA1332)

④ Remove the four screws. (ABA1353)

⑤ Remove the one screw. (ABA1341)

⑥ Remove the rear case (427).



2 Access to PCB Assys

● **SIDE Assy**

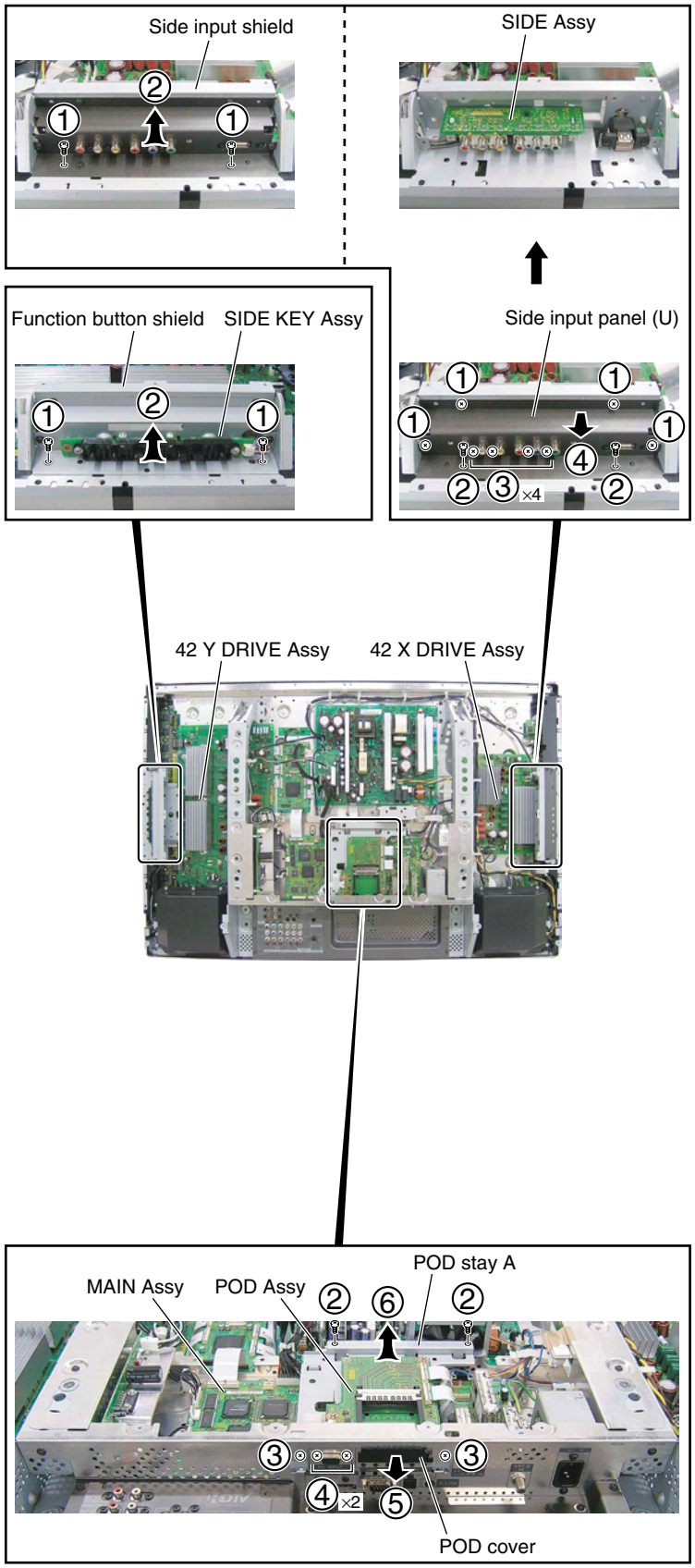
① Remove the four screws.
② Remove the two screws.
③ Remove the four screws.
④ Remove the side input panel (U).

● **42 X DRIVE Assy**

① Remove the two screws.
② Remove the side input shield with PCB.

● **42 Y DRIVE Assy**

① Remove the two screws.
② Remove the function button shield with PCB.

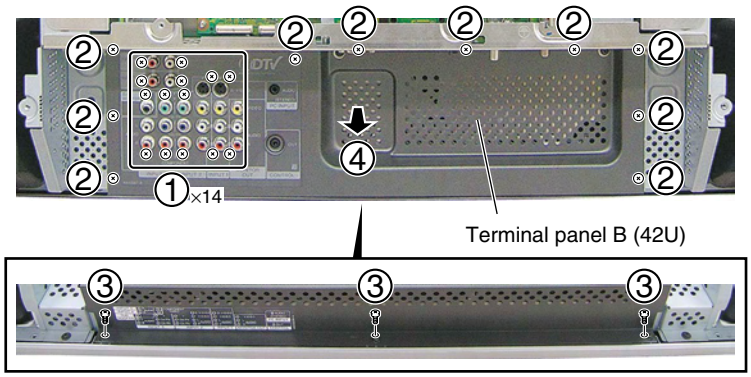


● **MAIN Assy**

① Disconnect cables, connectors, as required.
② Remove the two screws.
③ Remove the two screws.
④ Remove the two hex. head screws.
⑤ Remove the POD cover.
⑥ Remove the POD stay A with PCB.

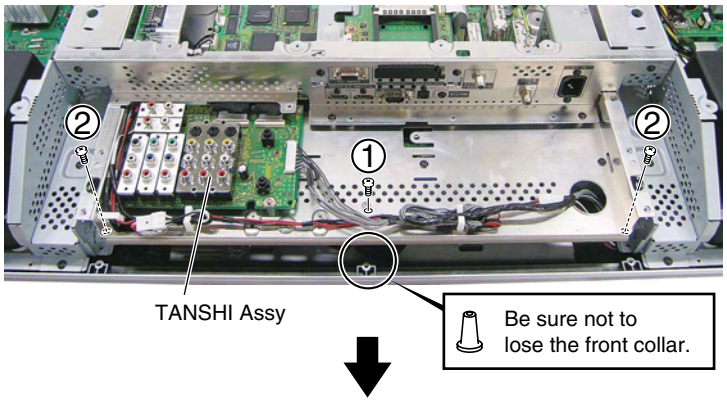
3 Terminal Panel B (42U)

① Remove the 14 screws.
② Remove the 10 screws.
③ Remove the three screws.
④ Remove the terminal panel B (42U).

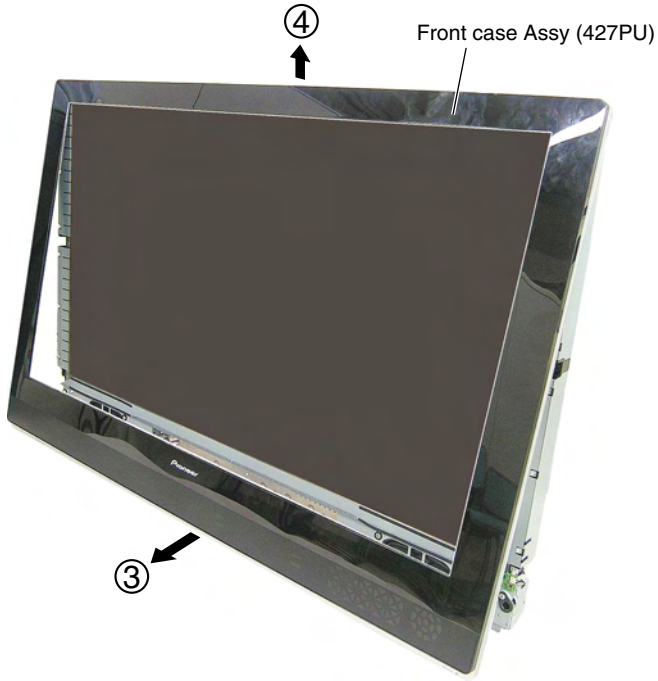


4 Front Case Assy

① Remove the one screw.
② Remove the two screws.



③ Pull the lower part of the Front case Assy(427PU) toward you and out.
④ Remove the Front case Assy (427PU), by pulling it upward.



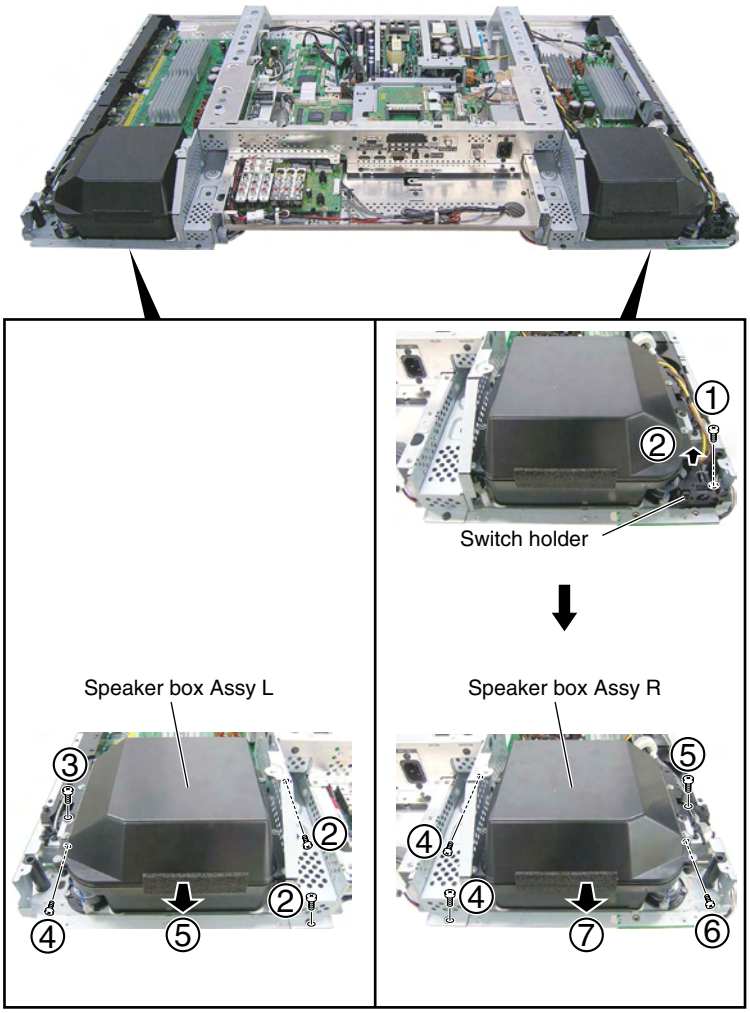
5 Speaker Box Assy L and R

● **Speaker Box Assy L**

① Disconnect cables, connectors, as required.
② Remove the two screws.
③ Remove the one screw.
④ Remove the one screw.
⑤ Remove the speaker box Assy L.

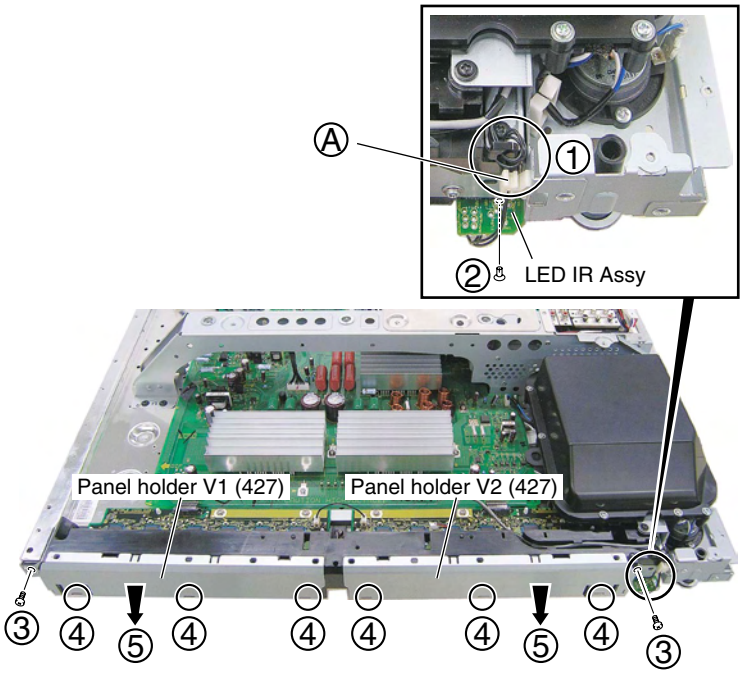
● **Speaker Box Assy R**

① Remove the one screw.
② Remove the switch holder.
③ Disconnect cables, connectors, as required.
④ Remove the two screws.
⑤ Remove the one screw.
⑥ Remove the one screw.
⑦ Remove the speaker box Assy R.

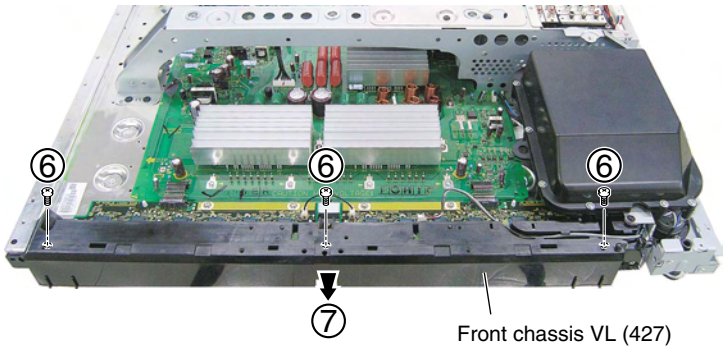


6 Exchange of SCAN IC

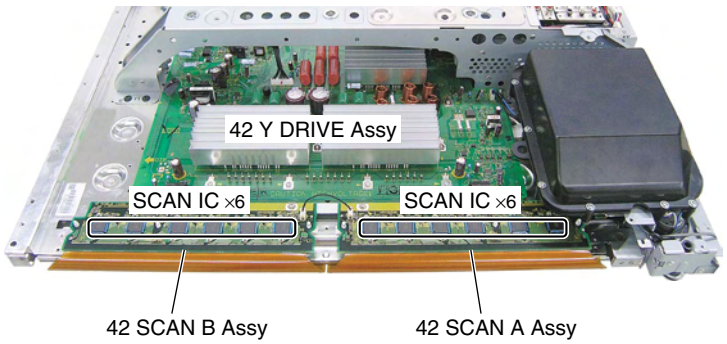
① Loosen the jumper wire.
② Remove the LED IR Assy by removing the one nyron rivet.
Ⓐ Remove the locking wire saddle.
③ Remove the two screws.
④ Unhook the six hooks.
⑤ Remove the panel holders V1 (427) and V2 (427).



⑥ Remove the three screws.
⑦ Remove the front chassis VL (427).



Exchange



7. ADJUSTMENT

1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

7.1 ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	Refer to "7.4 HOW TO CLEAR HISTORY DATA" and "7.6 PROCEDURE WHEN REPLACING THE POWER UNIT"
42 DIGITAL Assy	Writing of backup data is required. Refer to the "7.3 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
42 X DRIVE Assy	No adjustment required
42 Y DRIVE Assy	No adjustment required
Service Panel Assy	Refer to "7.5 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED."
MAIN Assy (*)	No adjustment required
SENSOR Assy	Writing of backup data is required. Refer to the "7.3 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
TANSHI Assy	No adjustment required

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

Note: Checking the Cable Card ID

The PDP has a slot for a cable card that is used for managing your information by the cable TV company. The following procedure allows you to check your Cable Card ID and the Host ID.

1. Press HOME MENU.
2. Select “Tuner Setup”. (▲/▼ then ENTER)
3. Select “Channel Setup”. (◀/▶ then ENTER)
4. Select “POD ID”. (▲/▼)
   • The Host ID and Cable Card ID appear.
5. Press HOME MENU to exit the menu.

7.2 ADJUSTMENT REQUIRED WHEN PART IS REPLACED

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.
If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

PCB Assy No.	Function Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWW1139	42 DIGITAL Assy	IC3151	Module microcomputer	AGC1011
		IC3401	Sequence IC	PEG239A
		IC3301	Flash memory	AGC1009
		IC3156	EEPROM	BR24L04FJ-W
AWW1140	SENSOR Assy	IC3652	EEPROM	BR24L02FJ-W
AWV2312	MAIN Assy	IC4701	AV switch	R2S11002AFT
		IC4901	RGB switch	R2S11001FT
		IC5101	Main VDEC	UPD64015GM-UEU
		IC5301	A/D converter	AD9985KSTZ-110
		IC6201	System IC	BCM3517KQLGB0
		IC6602	DDR-SDRAM	EDD2516AKTA-6B
		IC6603	DDR-SDRAM	EDD2516AKTA-6B
		IC6604	DDR-SDRAM	EDD2516AKTA-6B
		IC6605	DDR-SDRAM	EDD2516AKTA-6B
		IC6902	NOR Flash	AGC1008
		IC8202	Flash ROM	AGC1007
		IC8402	Flash ROM	AGC1006

POWER SUPPLY Unit	➡	The assembly must be replaced as a unit, and no part replacement is allowed.
MAIN Assy (*)	➡	No adjustment is required after replacement of parts other than those mentioned above.
42 DIGITAL Assy	➡	No adjustment is required after replacement of parts other than those mentioned above.
42 X DRIVE Assy	➡	No adjustment is required after replacement of parts other than those shown in the following page.
42 Y DRIVE Assy	➡	No adjustment is required after replacement of parts other than those shown in the following page.
42 ADDRESS Assy	➡	No adjustment required
SENSOR Assy	➡	No adjustment is required after replacement of parts other than those mentioned above.
TANSHI Assy	➡	No adjustment required

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

7.3 BACKUP WHEN THE PANEL UNIT IS ADJUSTED

■ Outline

Adjustment data are stored in the EEPROM (IC3156/4K) on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup: IC3652) on the SENSOR Assy.
If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the SENSOR Assy to a new DIGITAL Assy.

■ Backed up data

- Drive voltage adjustment value
- Hour-meter count
- Pulse-meter count
- Panel white balance adjustment value
- Serial No.
- Drive waveform adjustment value
- P-ON counter value
- PD/SD histories

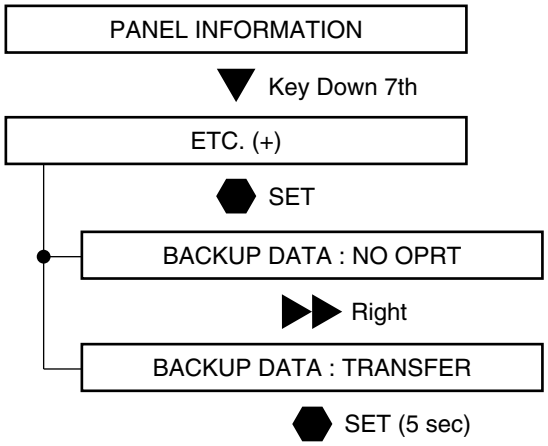
■ How to copy backup data

1. When the DIGITAL Assy is replaced with one for service (usual service)

Adjustment data can be restored by copying the data backed up in the SENSOR Assy to the EEPROM on a new DIGITAL Assy.
The EEPROM on the new DIGITAL Assy has no adjustment data, and the EEPROM for backup in the SENSOR Assy has adjustment data. After replacing the DIGITAL Assy, enter PANEL FACT. mode, display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP". Then, proceed in the following steps:

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

- After the DIGITAL Assy is replaced with one for service, be sure to check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page of the PANEL FACT. mode.
- If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.
- If both the DIGITAL and SENSOR Assys are to be replaced, first replace the SENSOR Assy, turn the unit on and back off again, then replace the DIGITAL Assy.

(2) Copying, using the RS-232C commands

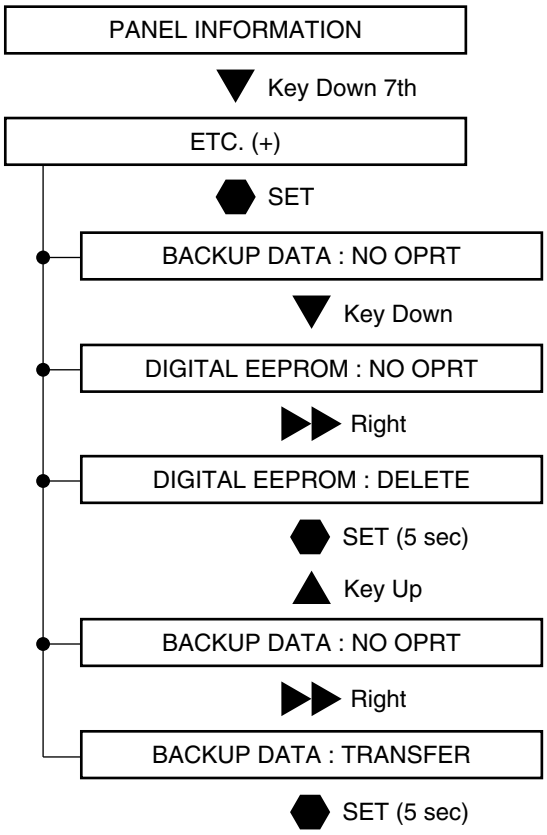
① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
③ Issue the BCP command to transfer the data stored in the EEPROM for backup.
④ Turn the power off.

2. When a secondhand DIGITAL Assy that had been mounted in another product is to be reused

As adjustment data for another product are already stored in the secondhand DIGITAL Assy, first delete those data then copy the backup data stored in the EEPROM on the SENSOR Assy.

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

Note:
If the secondhand DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the DIGITAL Assy are copied over the EEPROM in the SENSOR Assy. Thus the backup data can never be restored. During the first power-on after the DIGITAL Assy is replaced, be sure to enter Factory mode to copy the backup data. Or, before removing the secondhand DIGITAL Assy from the original product, delete the adjustment data on it, using the Factory mode (DIGITAL EEPROM: DELETE), mount it to the product to be repaired, then copy the data from the backup EEPROM.

(2) Copying, using the RS-232C commands

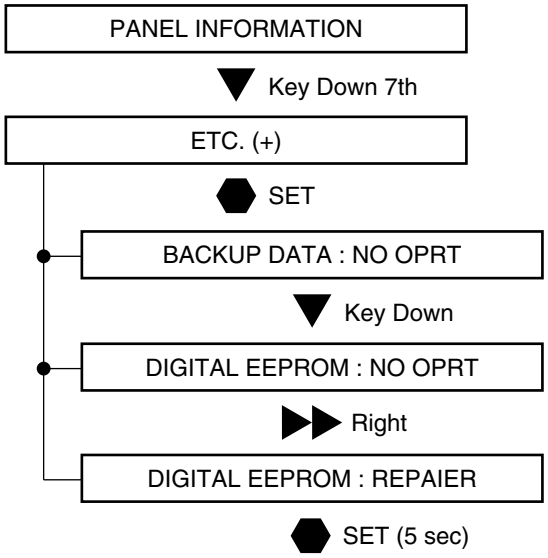
① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
③ Issue the UAJ command to delete data stored in the EEPROM on the DIGITAL Assy.
④ Issue the BCP command to transfer the data stored in the EEPROM for backup.
⑤ Turn the power off.

3. In a case where normal backup data are not stored in the backup EEPROM because the EEPROM on the DIGITAL Assy is defective, etc., and where manually adjusted values are to be applied to the product

Note: In this section, it is assumed that settings for various items have been completed, using Factory menu or RS-232C commands.

(1) Method using the Factory menu

① Set various setting/adjustment values.
② Proceed in the following steps.



③ Turn the power off.

Note:
When a DIGITAL Assy with an EEPROM in which adjustment data are stored is mounted, this step is not required after manual adjustment. ("DIGITAL EEPROM: REPAIR" is not indicated.)

(2) Method using the RS-232C commands

Issue the FAJ command.

7.4 HOW TO CLEAR HISTORY DATA

Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

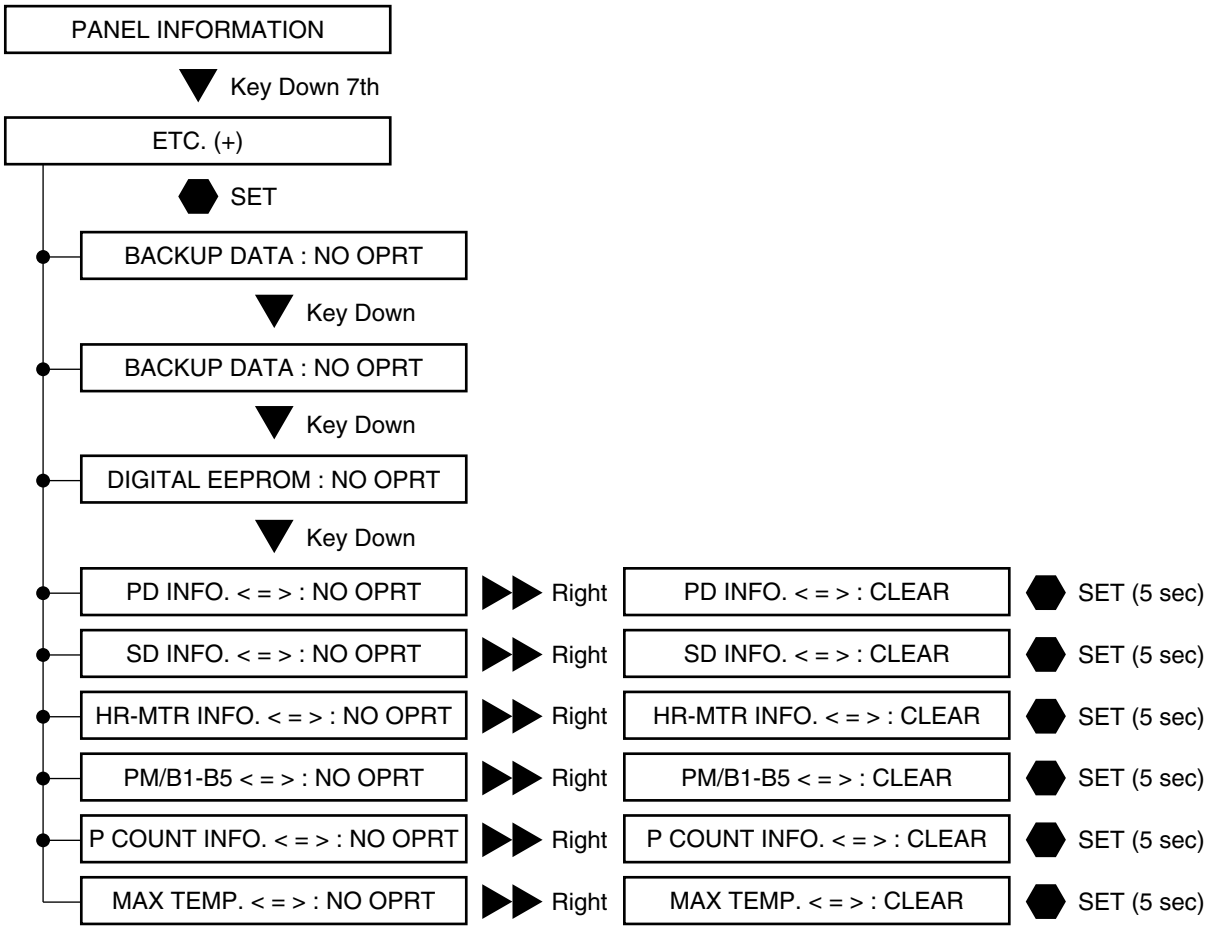
(1) Clearance of logs, using the RS-232C commands

Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

Notes:
- As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
- When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

(2) Clearance of logs, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Delete various logs, as shown in the figure below.



③ Turn the power off.

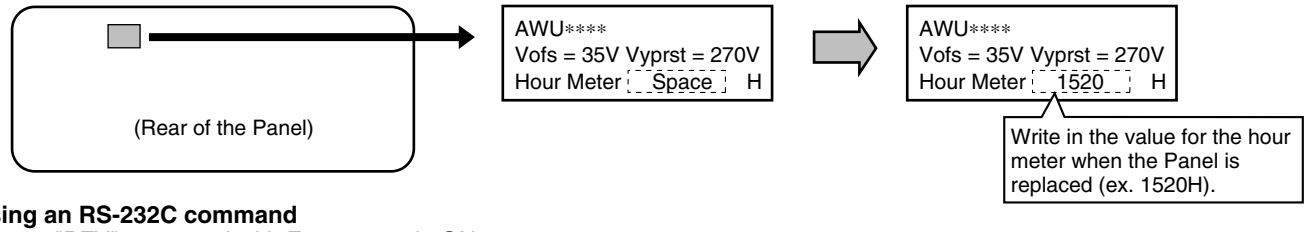
7.5 ADJUSTMENT WHEN THE SERVICE PANEL ASSY IS REPLACED

When the Panel Assy is replaced with one for service, the following adjustments are required:

■ Adjustments of Vofs voltage and Vyprst voltage

Enter the reference adjustment values for the Vofs voltage and Vyprst voltage that are written on the label attached to the panel for service.

Note: Enter the values, using an RS-232C command or the Factory Menu.


(Rear of the Panel)
AWU****
Vofs = 35V Vyprst = 270V
Hour Meter Space H
AWU****
Vofs = 35V Vyprst = 270V
Hour Meter 1520 H
Write in the value for the hour meter when the Panel is replaced (ex. 1520H).

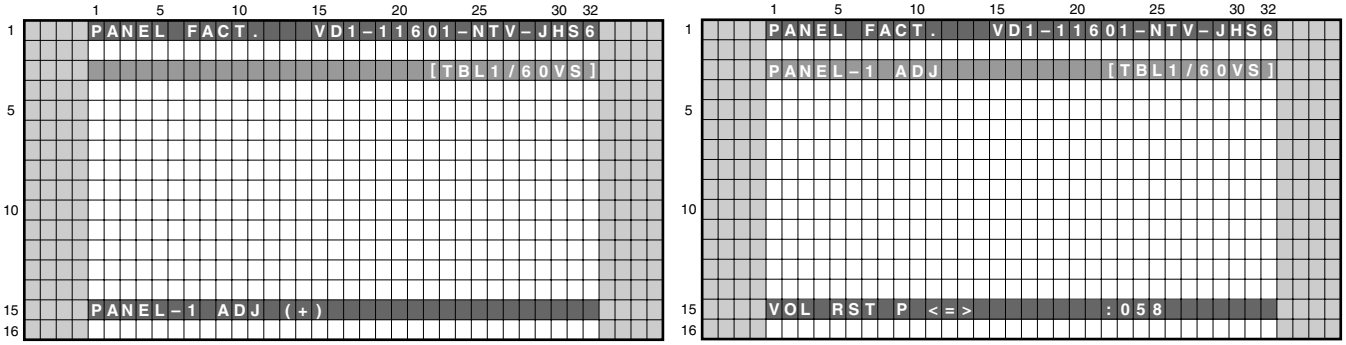
Using an RS-232C command

Enter a "PFY" command with Factory mode ON.

Convert the adjustment voltage values written on the label attached at the rear of the Panel to an input command, referring to the conversion chart. (See the next page.)

- Reference adjustment of the Vofs voltage: Ex. "Vofs = 35" → (Check the conversion chart.) Enter "VOF112."
- Reference adjustment of the Vyprst voltage: Ex. "Vyprst = 270 V" → (Check the conversion chart.) Enter "VRP078."

Using the Factory Menu



Select the main item "PANEL FACT." by pressing the MUTE key then enter Panel Factory mode by pressing the SET key.
Using the ▲/▼ keys, select "PANEL-1 ADJ" then press the SET key to enter the next lower nested layer.
Select "VOL-OFFSET" or "VOL RST P" then enter a command value converted from the voltage value, using the ◄/► keys.

■ Clearing data on various histories of the Panel, such as those on the hour meter

- It is necessary to clear the data on the hour meter, etc. to match them to the actual driving hours of the Panel.
- It is also necessary to clear the data on SD and PD, because the accumulated power-on time when a shutdown or power-down occurred is recorded.

Note: Clear the values, using an RS-232C command or the Factory Menu.
There are two types of hour meters. Do not take the MTB hour meter for the hour meter.

Using an RS-232C command

To acquire the accumulated power-on time of the product itself, use the "QS2" of RS-232C command.

1. To clear the data on the hour meter (for the Panel) : CHM
2. To clear the data on the pulse meter : CPM
3. To clear the data on the SD history : CSD
4. To clear the data on the PD history : CPD

Using the Factory Menu

See "7.1.6 HOW TO CLEAR HISTORY DATA."

■ Conversion charts for electronic VRs (Vprst/Vofs)

Vprst [V]	Setting value [STEP]
236	000
237	002
238	004
239	006
240	009
241	011
242	013
243	016
244	018
245	020
246	022
247	025
248	027
249	029
250	032
251	034
252	036
253	039
254	041
255	043
256	045
257	048
258	050
259	052
260	055
261	057
262	059
263	062
264	064
265	066
266	069
267	071
268	073
269	075
270	078
271	080
272	082
273	085
274	087
275	089
276	092
277	094
278	096
279	098

Vprst [V]	Setting value [STEP]
280	101
281	103
282	105
283	108
284	110
285	112
286	115
287	117
288	119
289	121
290	124
291	126
292	128
293	131
294	133
295	135
296	138
297	140
298	142
299	144
300	147
301	149
302	151
303	154
304	156
305	158
306	161
307	163
308	165
309	168
310	170
311	172
312	174
313	177
314	179
315	181
316	184
317	186
318	188
319	191
320	193
321	195
322	197
323	200

Vprst [V]	Setting value [STEP]
324	202
325	204
326	207
327	209
328	211
329	214
330	216
331	218
332	220
333	223
334	225
335	227
336	230
337	232
338	234
339	237
340	239
341	241
342	243
343	246
344	248
345	250
346	253
347	255

Vofs [V]	Setting value [STEP]
14	000
15	005
16	010
17	015
18	021
19	027
20	032
21	037
22	043
23	048
24	053
25	059
26	064
27	069
28	075
29	080
30	085
31	091
32	096
33	101
34	107
35	112
36	118
37	123
38	128
39	134
40	139
41	144
42	150
43	155
44	160
45	166
46	171
47	176
48	182
49	187
50	192
51	198
52	203
53	209
54	214
55	219
56	225
57	230

Vofs [V]	Setting value [STEP]
58	235
59	241
60	246
61	251
62	255

7.6 PROCEDURE WHEN REPLACING THE POWER SUPPLY UNIT

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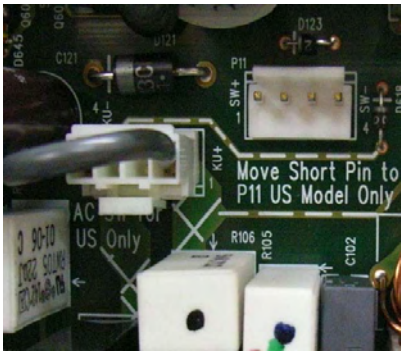
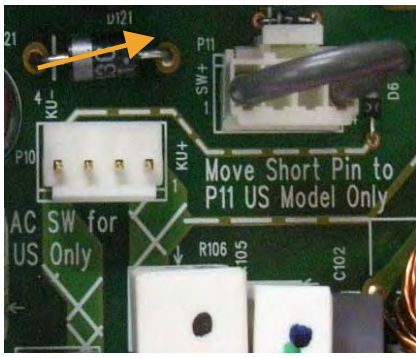
When replacing Power Supply Assy, it is necessary to perform the following connector changes.
Otherwise a unit cannot work properly and it might cause damage of unit.
Therefore perform this connector settings without fail when replacing Power Supply Assy (before power on the unit)

Location of jumper connector

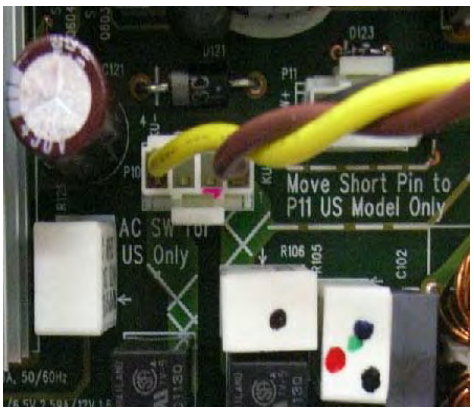
1. As for service parts, Jumper connector is connected at connector P10.



2. Remove the jumper connector from connector P10 and connect it to connector P11



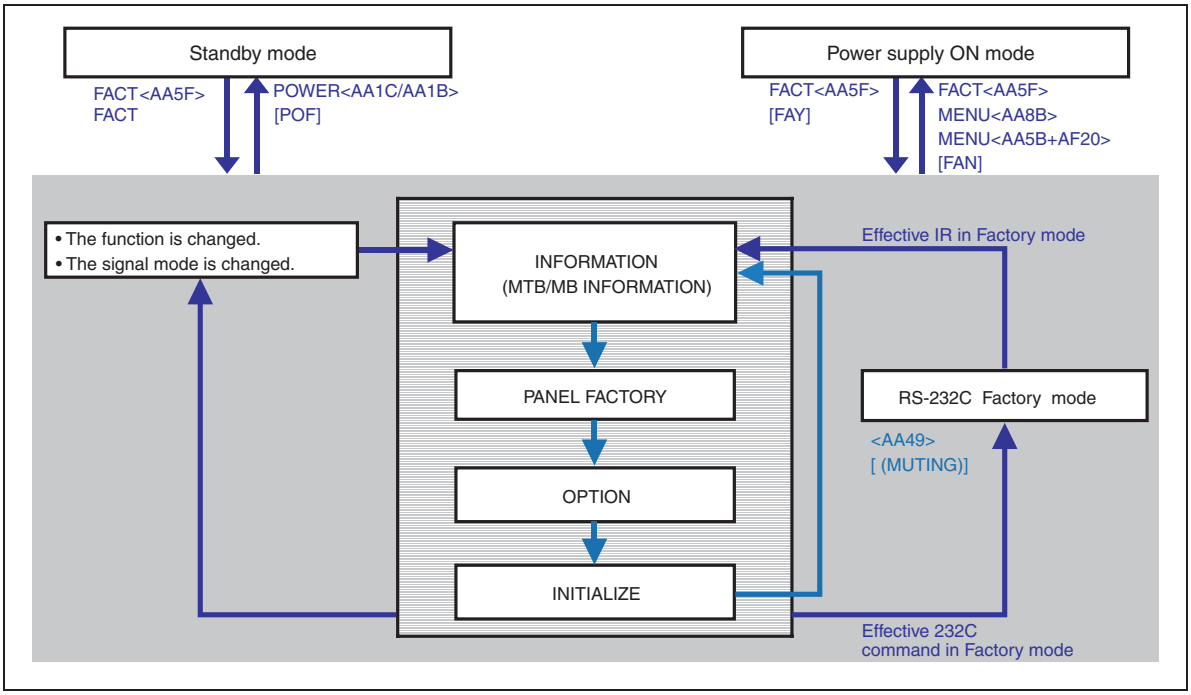
3. Connect cable connector from power SW to P10



8. SERVICE FACTORY MODE

8.1 OUTLINE OF THE SERVICE FACTORY

8.1.1 SERVICE FACTORY MODE TRANSITION CHART



8.1.2 HOW TO ENTER SERVICE FACTORY MODE AND DO IT GO OUT

■ **How to enter Service Factory Mode.**

Case operated by remote control)
- Service remote control : press[FACTORY1]key.

Case to transmit command)
- Standby mode : Send [PON]+[FAY] .
- Power supply ON mode : Send[FAY] .

■ **How to come off Service Factory Mode.**

Case operated by remote control)
- Service remote control : press [FACTORY1] key.
- Remote control : press [HOME MENU] key.

Case to transmit command)
- Send [FAN] .

8.1.3 FUNCTIONS WHOSE SETTING ARE SET TO OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (Including when the “FAY” command is received) :

No.	Function	Remarks
1	Two screen operation	Input function set on the main side is selected.
2	FREEZE	
3	Mask control	MTB/MB is none. It becomes processing on the PANEL side.
4	ORBITER	Central value operation.
5	Detection of the TRAP switch	The detection operation is stopped.
6	TRAP history	To a possible turning on though the memory is maintained.
7	Display of TV guide	
8	Setting of Parental Control	When this is turned off, the block of the screen is released.

Note) Enter the factory after canceling ACI because the ACI operation setting OFF and not done.

■ **User data**

User data will be treated as follows :
- User data on picture- and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- As to data on various settings, user data will be applied to the items that are associated with signal format change (screenize switching, etc).
- Data on screen (i.e.,screen position; meaning clock dividers, and not including data on screen size) Are reset to the default values (data stored in memory will be retained). Screen size will be retained.

8.1.4 REMOTE CONTROL CODES IN SERVICE FACTORY MODE

SR/R Keys	Basic Functions	Remarks
Muting	Switching the main items	Shifting to the next main item (top).
↓(DOWN)	Switching the subtitled items.	Shifting downward to the next subtitiled item.
↑(UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
←(LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→(RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1-6 etc)
CH+/P+	Increasing the channel number.	Advanving.
CH-/P-	Decreasing the channel number.	
Numeric keys	Function: TV	Function: TV(previously selected channel number is selected).
POWER	Power OFF	Turning the power off.
FACTORY	Factory OFF(Factory mode) Factory ON(Non-Factory mode)	In Factory mode , turning Factory mode off. In Non-Factory mode , turning Factory mode on.
HOME MENU Note 1)	Menu ON.	In Factory mode , turning Factory mode off, and Menu mode on.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Increasing 10 the adjustment value. (PANEL FACTORY)
DRIVE ON/OFF Note 2)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR Note 1)	INTEGRATOR MENU ON	Enter INTEGRATOR MODE.

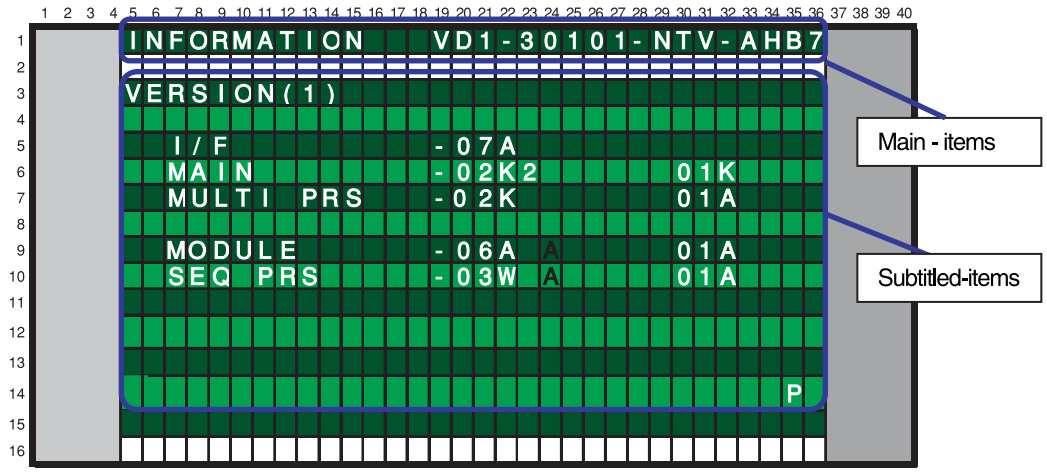
Note 1) A pertinent key that exists in the service remote control, becomes effective only in the factory and integrator mode. Please use the remote control of the attachment when you normally operate it in the mode (home menu operation, etc.).

Note 2) When ten seconds have passed since the [DRIVE ON/OFF] key was pressed at the standby, it becomes invalid. Please press [POWER] key from the [DRIVE ON/OFF] key pressing within ten seconds when you do power supply ON while driven OFF.

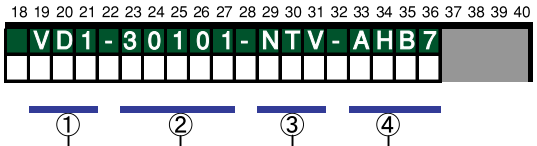
8.1.5 CONFIGULATION OF G7 FACTORY MODE

Main item	Submode Name	Submode item	Adjustable Range	Remarks
8.2.1 INFOMATION				
8.2.1.1	VERSION (1)			
8.2.1.2	VERSION (2)			
8.2.1.3	VERSION (3)			
8.2.1.4	MAIN NG	CLEAR <=>	NO<=>YES	
8.2.1.5	TEMPERATURE			
8.2.1.6	HOUR METER	MTB HOUR METER	NO<=>YES	
8.2.1.7	HDMI SIGNAL INFO 1			
8.2.1.8	HDMI SIGNAL INFO 2			
8.2.1.9	VDEC SIGNAL INFO			
8.2.1.10	DTV TUNING STATUS1			
8.2.1.11	DTV TUNING STATUS2			
8.2.1.12	DTV TUNING STATUS3			
8.2.1.13	DTV TV-GUIDE BER			for technical analysis
8.2.1.14	DEBUG INFO			for technical analysis
8.2.2 PANEL FACTORY (+)				
8.2.2.1	PANEL INFORMATION			
8.2.2.2	PANEL WORKS			
8.2.2.3	POWER DOWN			
8.2.2.4	SHUT DOWN			
8.2.2.5	PANEL-1 ADJ (+)			
		X-SUS B ⇔	120 to 136	Equivalent to XSB
		Y-SUS B ⇔	120 to 136	Equivalent to YSB
		Y-SUSTAIL T1 ⇔	120 to 136	Equivalent to YTG
		Y-SUSTAIL T2 ⇔	120 to 136	Equivalent to YTB
		Y-SUSTAIL W ⇔	120 to 136	Equivalent to YTW
		XY-RST W1 ⇔	120 to 136	Equivalent to RSW
		XY-RST W2 ⇔	120 to 136	Equivalent to RYW
		VOL SUS ⇔	000 to 255	Equivalent to VSU
		VOL OFFSET ⇔	000 to 255	Equivalent to VOF
		VOL RST P ⇔	000 to 255	Equivalent to VRP
		SUS FREQ. ⇔	MODE1-MODE8	Equivalent to SFR
8.2.2.6	PANEL-2 ADJ (+)			
		R-HIGH ⇔	000 to 511	Equivalent to PRH
		G-HIGH ⇔	000 to 511	Equivalent to PGH
		B-HIGH ⇔	000 to 511	Equivalent to PBH
		R-LOW ⇔	000 to 999	Equivalent to PRL
		G-LOW ⇔	000 to 999	Equivalent to PGL
		B-LOW ⇔	000 to 999	Equivalent to PBL
		ABL ⇔	000 to 255	Equivalent to ABL
8.2.2.7	PANEL REVISE (+)			
		R-LEVEL ⇔	LV-0 to LV-7	Equivalent to RRL
		G-LEVEL ⇔	LV-0 to LV-7	Equivalent to RGL
		B-LEVEL ⇔	LV-0 to LV-7	Equivalent to RBL
8.2.2.8	ETC (+)			
		BACKUP DATA ⇔	NO OPRT ⇔ TRANSFER or ERR	Equivalent to BCP
		DIGITAL EEPROM ⇔	NO OPRT ⇔ DELETE/REPAIR	Equivalent to FAJ/UAJ
		PD INFO. <=>	NO OPRT ⇔ CLEAR	Equivalent to CPD
		SD INFO. <=>	NO OPRT ⇔ CLEAR	Equivalent to CSD
		HR-MTR INFO. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CHM
		PM/B1-B5 <=>	NO OPRT ⇔ CLEAR	Equivalent to CPM
		P COUNT INFO. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CPC
		MAX TEMP. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CMT
8.2.2.9	RASTER MASK SETUP (+)			
		MASK OFF		Equivalent to MKS+S00
		RST MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKS+S51
		•••	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	•••
		RST MASK 24 ⇔		Equivalent to MKS+S74
8.2.2.10	PATTEN MASK SETUP (+)			
		MASK OFF		Equivalent to MKS+S00
		PTN MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKS+S01
		•••	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	•••
		PTN MASK 39 ⇔		Equivalent to MKS+S39
8.2.2.11	COMBI MASK SETUP (+)			
		MASK OFF		Equivalent to MKC+S00
		CMB MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKC+S01
		CMB MASK 10 ⇔	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	•••
				Equivalent to MKC+S10
8.2.3 OPTION				
8.2.3.1	EDID WRITE MODE ⇔		OFF ⇔ ON	for production line
8.2.3.2	ANTENNA MODE ⇔		CABLE ⇔ AIR	for production line
8.2.3.3	AFT ⇔		OFF ⇔ ON	for production line
8.2.4 INITIALIZE				
8.2.4.1	SYNC DET (+)			for technical analysis
8.2.4.2	SG MODE ⇔		SG OFF⇔ •••	
8.2.4.3	SG PATTERN ⇔		SG PATTERN⇔COLORBAR1 •••	
8.2.4.4	SIDE MASK LEVEL (+)			
		R MASK LEVEL ⇔	000 to 255	
		G MASK LEVEL ⇔	000 to 255	
		B MASK LEVEL ⇔	000 to 255	
8.2.4.5	FINAL SETUP (+)	DATA RESET ⇔	OFF ⇔ ON	
8.2.4.6	HMG/HG SERVICE MODE	MODE SHIFT ⇔	OFF ⇔ ON	
8.2.4.7	CVT AUTO ⇔			
8.2.4.8	HDMI INTR POSITION (+)	INTR-POS1(0x75) ⇔	000 to 255	for technical analysis
		INTR-POS2(0x76) ⇔	000 to 255	for technical analysis
		INTR-POS3(0x77) ⇔	000 to 255	for technical analysis
		INTR-POS4(0x78) ⇔	000 to 255	for technical analysis

8.1.6 INDICATIONS IN SERVICE FACTORY MODE



■ Main-item indications



①	Input function
②	SIG mode and Screen size
③	Color system and Signal type
④	Option

Input function

Input function	OSD
VIDEO1-6	VD1-6
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
Home Gallery (Regular)	HG
Home Media Gallery (ELITE)	HMG
PC	PC

SIG mode and Screen size
Note: See SIG-Mode Tables.(See next page.)

Color system and Signal type

Color system and signal type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital video signal		DIG

Option(Destination, Panel Generation, etc)

Options	OSD
SX System in North America(Regular)	ATB7
SX system in North America(ELITE)	AHB7

②SIG Mode and Screen Size (by User is displayed)

1-2nd Character: SIG-Mode (resolution)

3-4th Character: SIG-Mode (refresh rate)

5th Character: Setting of the screen size that user configured

■SIG-Mode table for video signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
10	60	SDTV*525i	60.000	15.750
20	60	SDTV*525p	60.000	31.500
30	60	HDTV*1125i	60.000	33.750
40	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000

■SIG-Mode table for PC signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
C1	70	720x400	70.087	31.469
C2	60	640x480	59.940	31.469
	72		72.809	37.861
	75		75.000	37.500
C4	56	800x600	56.250	35.1556
	60		60.317	37.879
	72		72.188	48.077
	75		75.000	46.875
C7	60	1024x768	60.004	48.363
	70		70.069	56.476
	75		75.029	60.023
C9	60	1360x768	60.015	47.712

■Selection of the screen size by the user is displayed.

5th Character	GUI Notation	VIDEO	PC	Remark
0	DOT BY DOT	×	●	
1	4:3	●	●	
2	FULL (FULL1)	●	●	
3	ZOOM	●	×	
4	CINEMA	●	×	
5	WIDE	●	×	
8	FULL2	●	●	

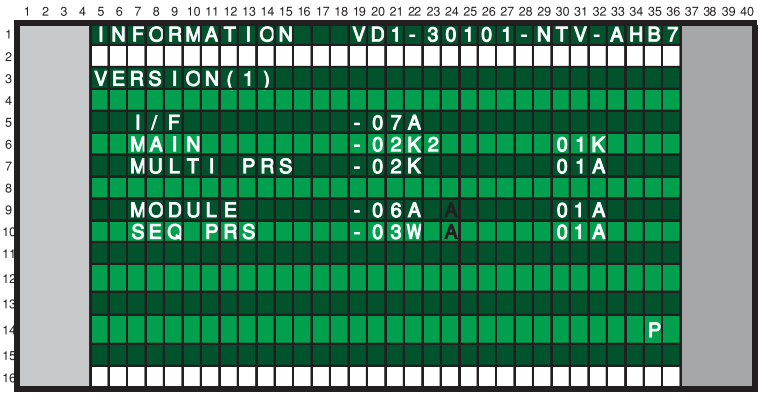
●: supported, ×: unsupported

8.2 DETAILS OF FACTORY MENU
8.2.1 INFORMATION MODE

■**Operation items**

No.	Function/Display	Context	RS232C
8.2.1.1	VERSION(1)	The Flash memory versions for each device are displayed. (Common Part)	QS1
8.2.1.2	VERSION(2)	The Flash memory versions for each device are displayed. (Individual Part)	QS6
8.2.1.3	VERSION(3)		QS6
8.2.1.4	MAIN NG	The Shutdown Message ID/Event Times in Main Microcomputer are displayed.	QNG
8.2.1.5	TEMPERATURE	The Temperature/FAN rotating status are displayed.	QMT
8.2.1.6	HOUR METER	The HOUR METER/P-COUNT information are displayed.	QIP
8.2.1.7	HDMI SIGNAL INFO 1	The Information of HDMI information files are displayed.	-
8.2.1.8	HDMI SIGNAL INFO 2		-
8.2.1.9	VDEC SIGNAL INFO	Display the Signal Information on VDEC.	-
8.2.1.10	DTV TUNING STATUS 1	Digital broadcast information and status is displayed upon receiving digital broadcast signal.	-
8.2.1.11	DTV TUNING STATUS 2		-
8.2.1.12	DTV TUNING STATUS 3		-
8.2.1.13	DTV TV-GUIDE BER	TV-Guide Bit Error Rate Information	-
8.2.1.14	DEBUG INFO	Debug Information.	-

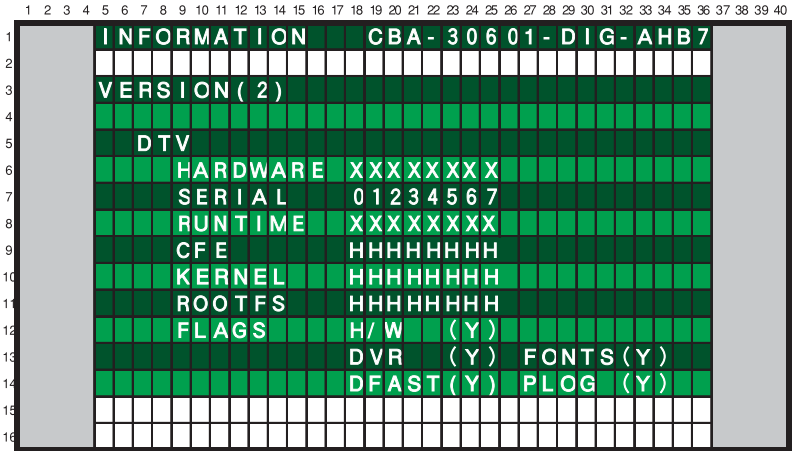
8.2.1.1 Version (1)



Micro Computer	Item Name	Ex.		Elite	Regular
		Executed program part	BOOT part		
IF microcomputer	I/F	-07A	–	○	○
MAIN microcomputer	MAIN	-02K2	01K	○	○
Multi processor	MULTI PRS	-02K2	01A	○	○
MODULE microcomputer	MODULE	-06A_A	01A	○	○
Sequence processor	SEQ PRS	-03W_A	01A	○	○

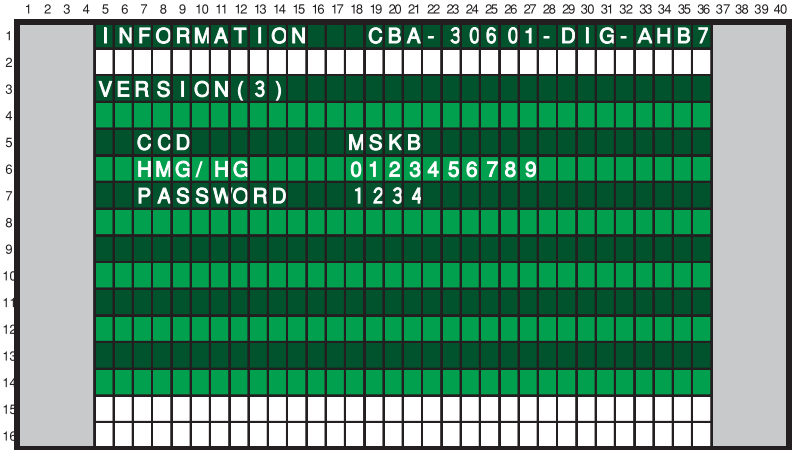
In the 29-32 rows, ROM version information on each device is displayed.
In the 19-24 rows, Version information on a common treatment is displayed.
At the position "14x35", The Past/Highly effective panel distinction information is displayed.
" P " : The past panel, "F" : The highly effective panel

8.2.1.2 VERSION (2)



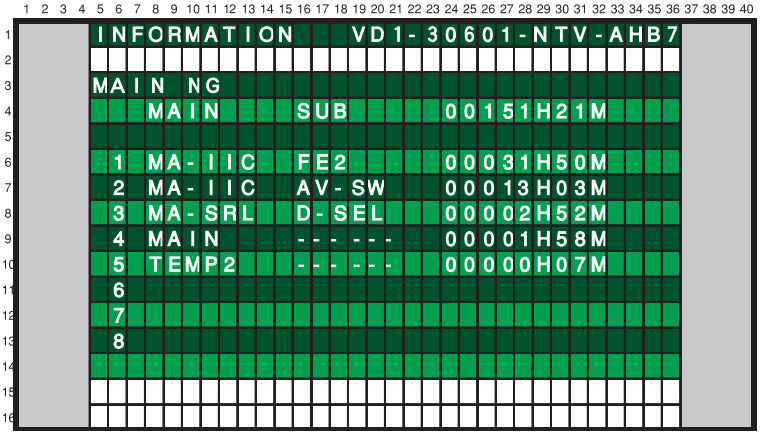
Flash Device	Item Name	Ex.	Elite	Regular
DTVHardware Version	HARDWARE	XXXXXXXX	○	○
DTV Hardware Serial	SERIAL	1234567	○	○
DTV Runtime Version	RUNTIME	XXXXXXXX	○	○
CFE Version	CFE	HHHHHHHH	○	○
KERNEL Version	KERNEL	HHHHHHHH	○	○
ROOTFS Version	ROOTFS	HHHHHHHH	○	○
FLAGS	FLAGS	H/W (Y)	○	○
		DVR (Y) FONTS(Y)	○	○
		DFTS (Y) PLOG (Y)	○	○

8.2.1.3 VERSION (3)



Flash Device	Item Name	Ex.	Elite	Regular
CCD-UCOM Version	CCD	MSKB	○	○
HMG/HG module Version	HMG/HG	0123456789	○	○
User Password	PASSWORD	1234	○	○

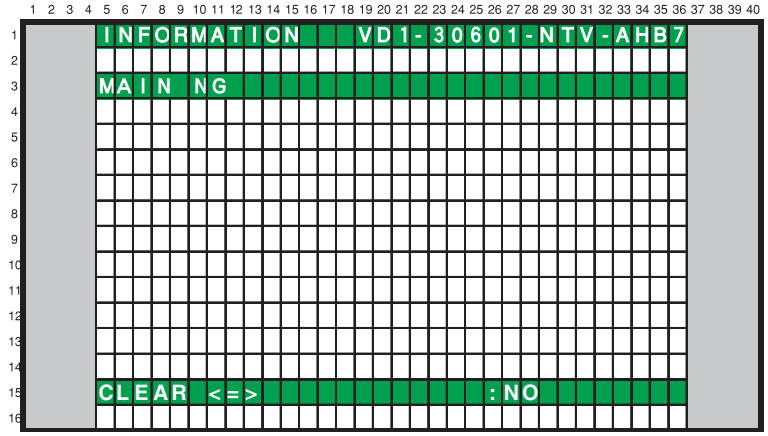
8.2.1.4 MAIN NG



■MTB side's Shutdown NG information

OSD:MAIN	OSD:SUB	Cause of shutdown
AUDIO	----	Shortcircuit of Speaker terminal
MODULE	----	Failure of communication to Module microcomputer
MA-SRL		3-wire Serial Communication of Main microcomputer
	IF	- Communication failure of IF microcomputer
	MULTI1	- MANTA communication failure (MULIT1)
	I/P	- MANTA communication failure (I/P)
	D-SEL	- MANTA communication failure (D-SEL)
MA-IIC		IIC Communication failure of Main microcomputer
	FE1	- Analog Tuner 1 (Front End 1)
	FE2	- Analog Tuner 2 (Front End 2)
	MPX	- MPX
	AUDIO	- Volume IC
	AV-SW	- AV Switch
	RGB-SW	- RGB Switch
	M-VDEC	- Main VDEC
	ADC	- AD/PLL
	HDMI	- HDMI
	MA-EEP	- 64k EEPROM
	CCD	- CCD
MAIN		Communication failure of Main microcomputer &Unknown Error
FAN		Fan stopped
TEMP2		Abnormally high temperature
DTUNER		Failure of Digital Tuner
	PS/RST	- Failure to DTB Starting
	DEVICE	- DTB Device Error
	TV-G	- TV-Guide Error
	HOME-G	- Failure at Home Gallary
MA-PWR	M-DCDC	-Abnormally in RST2 of MAIN Assy (power decrease of DC-DC converter)
	RELAY	-Abnormally in RST4 of MAIN Assy (power decrease of Relay power)
HMG		Failure at Home Media Gallary
	START	-

8.2.1.4 MAIN NG (Continued)

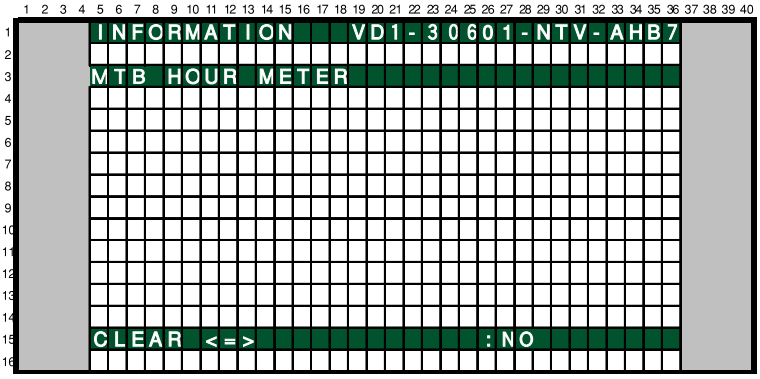


■ **CLEAR Operation**

Even if [←] key or [→] key is pushed, "CLEAR ⇔ YES" ⇔ "CLEAR ⇔ NO" is repeated. If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

The SYSTEM SERIAL displays only FHD. It corresponds by sticking the seal in G7 model.

The PANEL-side's HOUR METER/P-COUNT acquires information from the PANEL-side.

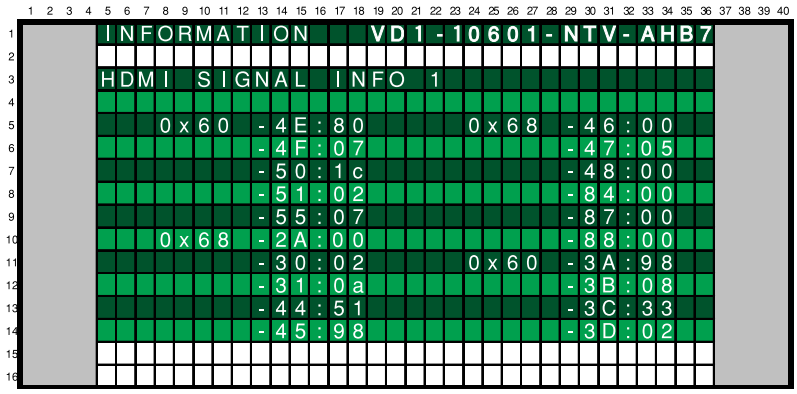


■Operation:

Even if [←] key or [→] key is pushed, "CLEAR <=> YES" <=> "CLEAR <=> NO" is repeated.

If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

8.2.1.7 HDMI SIGNAL INFO 1

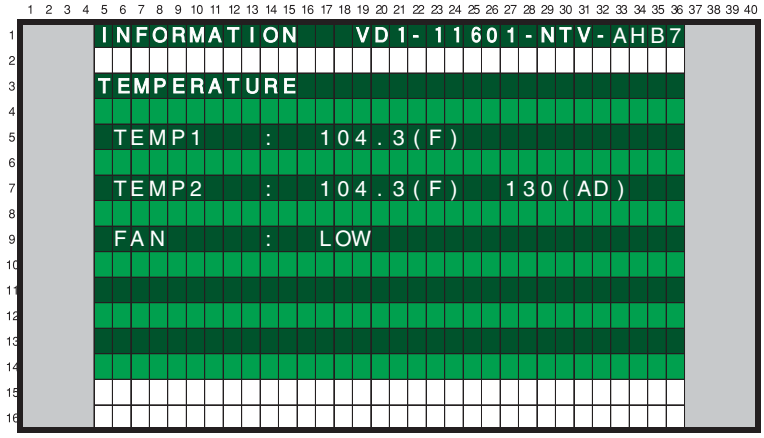


■Displays the input signal information of HDMI terminal.

HDMI SIGNAL INFO 1		
SA		Context
0x60	- 4E:	Video information: valid horizontal pixel numbers (low order bit)
	- 4F:	Video information: valid horizontal pixel numbers (high order bit)
	- 50:	Video information: valid vertical line numbers (low order bit)
	- 51:	Video information: valid vertical line numbers (high order bit)
	- 55:	Video information: interlace/non-interlace, sink polarity
0x68	- 2A:	Audio information: PCM/non PCM, copyright protected or not
	- 30:	Audio information: sampling frequency
	- 31:	Audio information: sampling bit rate
	- 44:	Audio information: color space
	- 45:	Video information: aspect ratio
	- 46:	Video information: scaling
	- 47:	Video information: video format
	- 48:	Video information: pixel count
	- 84:	Audio information: channel count
	- 85:	Audio information: not used (zero at all times)
	- 86:	Audio infromation: not used (zero at all times)
	- 87:	Audio information: speaker allocation
	- 88:	Audio information (down mix prohibit flag)
0x60	- 3A:	Video information: valid horizontal pixel numbers (low order bit)
	- 3B:	Video information: valid horizontal pixel numbers (high order bit)
	- 3C:	Video information: valid vertical line numbers (low order bit)
	- 3D:	Video information: valid vertical line numbers (high order bit)

8.2.1.5 TEMPERATURE

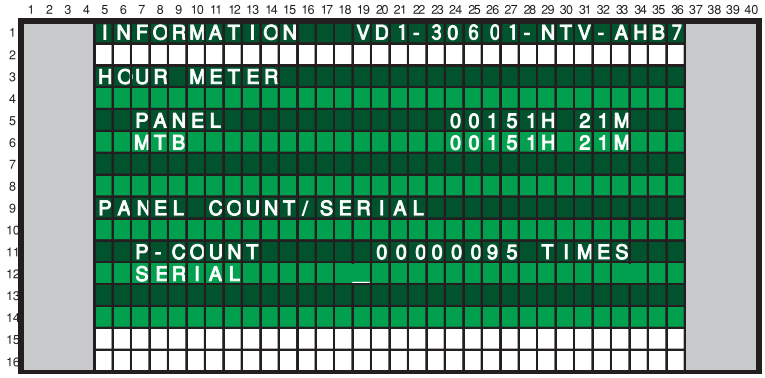
A present temperature and the FAN rotation are displayed.
If either [←] key or [→] key is pressed, the display data is refreshed.



■Display/Meaning

TEMP1 : The temperature of the sensor on the panel side is displayed by Fahrenheit (F).
TEMP2 : The temperature conversion display is done with 10bit the A/D input value of Main uCON 76PIN(AN0). It is displayed by both Fahrenheit (F) and 8bit A/D value. (Remark:When temperature (F) of the sensor becomes more than a specified temperature, the shutdown start of processing.)
FAN : The value of the Fan rotating state is displayed.
STOP:stopped, LOW:slow speed, HIGH:high speed.

8.2.1.6 HOUR METER



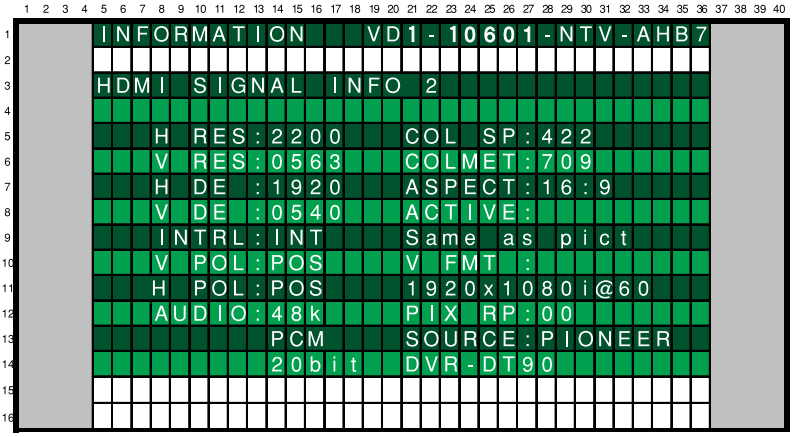
■Operation:

In HOUR METER screen on Factory Menu, press the [ENTER] key, and then it moves to the screen to clear MTB HOUR METER.

■Display/Meaning:

Meaning	Item Name	Ex.	RS-232C command
HOUR METER(PANEL)	PANEL	00151H 21M	QIP
HOUR METER(MTB)	MTB	00151H 21M	-
POWER ON COUNTER	P-COUNT	00000095 TIMES	QIP
SYSTEM SERIAL	SERIAL		QIP

8.2.1.8 HDMI SIGNAL INFO 2



■Displays input signal status of HDMI terminal.

Item	Meaning
H RES	Number of horizontal pixels (decimal)
V REES	Number of vertical lines (decimal)
H DE	Number of effectively horizontal pixels (decimal)
V DE	Number of effectively vertical lines (decimal)
INTRL	intetlace (=INT) or progressive(=PRG)
V POL	VSYNC polarity
H POL	HSYNC polarity
AUDIO (1 line)	sampling frequency (Ex. DVD : 48 kHz, CD : 44.1 kHz) ∗1
AUDIO (2 line)	PCM (PCM) or No PCM (=no PCM)
AUDIO (3 line)	Quantization bit
COL SP	color space (AVI Info) (422 or 444 or RGB) ∗2
COLMET	colormetry (AVI Info) (SD : 601, HD : 709) ∗2
ASPECT	aspect (AVI Info)
ACTIVE	video active format (AVI Info)
V FMT	video identification code (AVI Info)
PIX RP	pixel repeat value for 2880 dot
SOURCE (1line)	vender name of let-off device
SOURCE (2line)	model name of let-off device

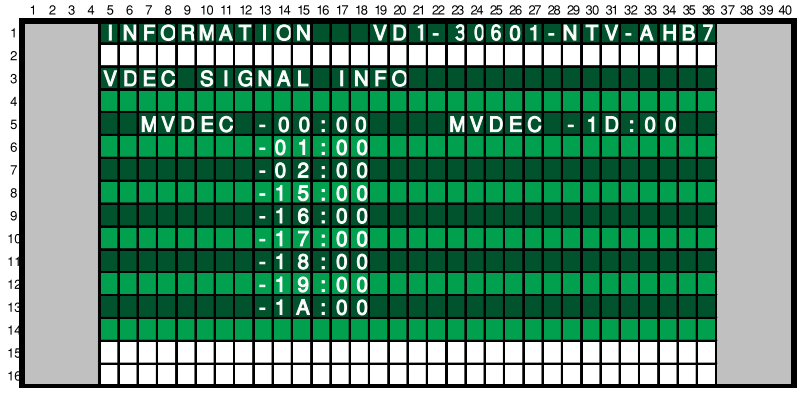
∗1 : Confirm if this item is displayed when the audio is not outputted.
∗2 : It may not match to the state of source devices when the color is abnormal.

Correspondence between the Display of HDMI FACTORY and the Resolution

Confirm the following 5 items when the video is not outputted.

Input Signal	Display of FACTORY				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)	858	262 or 263	720	240	720x480i @ 60
480p (525p)	858	525	720	480	720x480p @ 60
1080i (1125i)	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p)	1650	750	1280	720	1280x720p @ 60

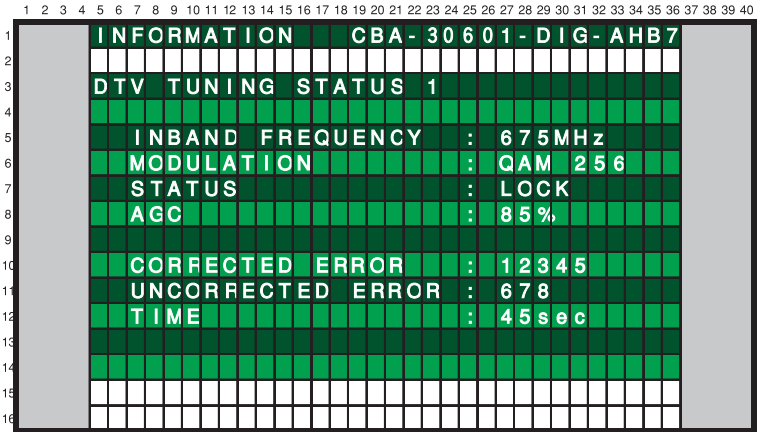
8.2.1.9 VDEC SIGNAL INFO



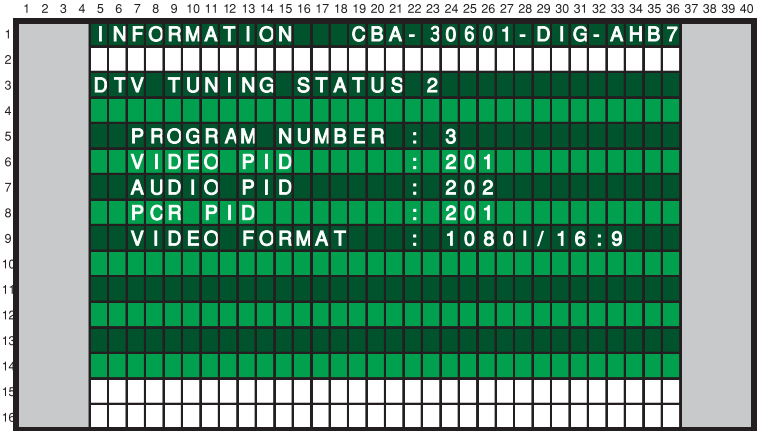
■**Displays input signal status of MVDEC terminal.**

Device	SA	Context
MVDEC	00h	Signal distinct result 1
	01h	Signal distinct result 2
	02h	Flag detection output
	15h	Noise level distinction 1
	16h	Noise level distinction 2
	17h	Non-standard signal detection
	18h	Sub carrier signal detection
	19h	ACC data output
	1Ah	ACC information output
	1Dh	Input signal mode

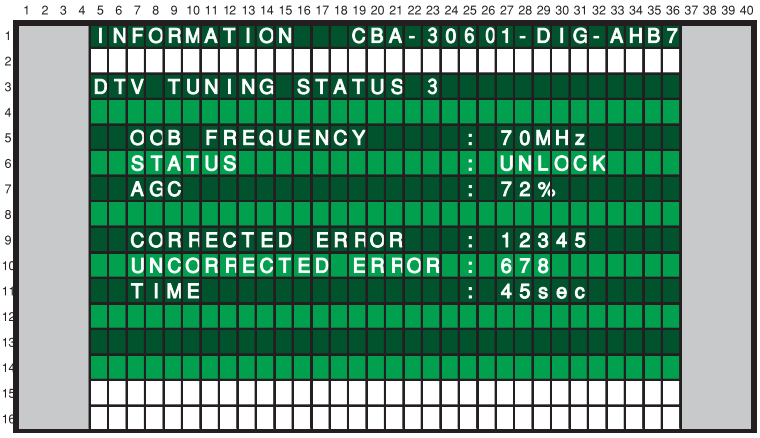
8.2.1.10 DTV TUNING STATUS 1



8.2.1.11 DTV TUNING STATUS 2



8.2.1.12 DTV TUNING STATUS 3



Displays digital broadcast signal information and status upon receiving digital signal.

8.2.1.13 DTV TV-GUIDE BER

Exclusively used for production line. TV-Guide error bit ratio information is displayed.

8.2.1.14 DEBUG INFO

Exclusively used for technical analsyis. Debug information for development use is displayed.

8.2.2 PANEL FACTORY MODE

■ Operation Items

This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

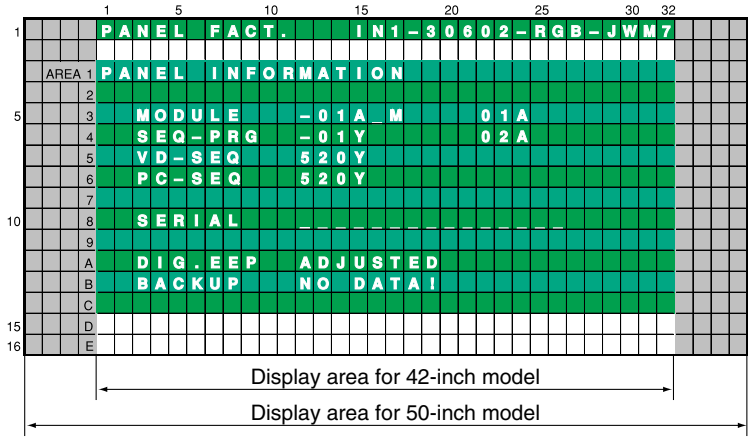
No.	Indication	Description of functions
8.2.2.1	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed.
8.2.2.2	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
8.2.2.3	POWER DOWN	The power-down history is displayed, with the hour-meter values that indicate the hour values when power-downs occurred.
8.2.2.4	SHUT DOWN	The shutdown history is displayed, with the hour-meter values that indicate the hour values when shutdowns occurred.
8.2.2.5	PANEL-1 ADJ (+)	Settings of the driving pulse timing and driving voltage can be performed.
8.2.2.6	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
8.2.2.7	PANEL REVISE (+)	The level for correction of panel degradation can be set.
8.2.2.8	ETC. (+)	Copying of backup data and clearance of various data can be performed.
8.2.2.9	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
8.2.2.10	PATTEN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
8.2.2.11	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

■ Details of indications in each layer

• In the following examples, GUI images for a 50-inch model are indicated. Although the display areas for the menu for 42-inch and 50-inch models are different, the items to be displayed are the same.

8.2.2.1 PANEL INFORMATION

• Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed. No other layers are nested below this layer, and there are no adjustment items.



■ Key operation

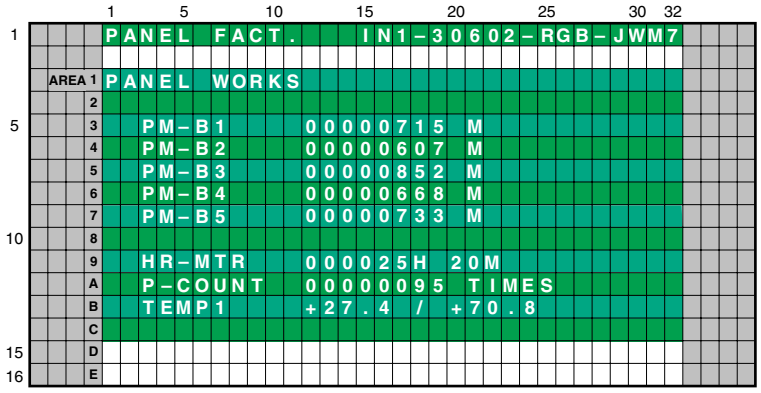
<DOWN> : Shifting to PANEL WORKS
<UP> : Shifting to COMBI MASK SETUP (+)
<L/R> : Updating displayed information

■ Display items:

MODULE : The version of data written in the Module microcomputer (IC3151) is indicated.
SEQ-PRG : The version of data written in the Sequence Program Storage Memory (IC3301) is indicated.
VD-SEQ : The Drive Sequence version for Video mode is indicated.
PC-SEQ : The Drive Sequence version for PC mode is indicated.
SERIAL : The serial number of the module is indicated.
DIG.EEP : The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
BACKUP : The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

8.2.2.2 PANEL WORKS

• Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer, and there are no adjustment items.



■ Key operation

<DOWN> : Shifting to POWER DOWN
<UP> : Shifting to PANEL INFORMATION
<L/R> : Updating displayed information

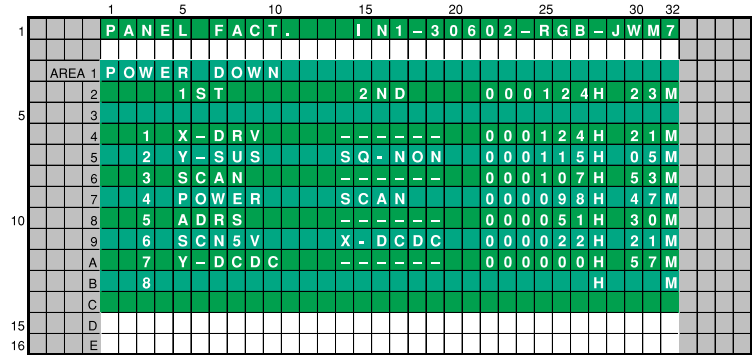
← Temperature unit is " °C (Centigrade) ".

■ Contents of the Display item

• PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
• HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
• P-COUNT: The accumulated power-on count is indicated.
• TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated.
The range of temperature indication is from -50.0 to +99.9. (The temperature unit is " °C (Centigrade) ".)

8.2.2.3 POWER DOWN

- The power-down history is displayed. The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1 POWER DOWN
1ST 2ND 0001248H 23M
1 X-DRV ------ 0001248H 21M
2 Y-SUS SQ-NON 0001157H 05M
3 SCAN ------ 0001077H 53M
4 POWER SCAN 0000098H 47M
5 ADRS ------ 0000051H 30M
6 SCN5V X-DCDC 0000022H 21M
7 Y-DCDC ------ 0000000H 57M
8 H M

■ Key operation

<DOWN> : Shifting to SHUT DOWN
<UP> : Shifting to PANEL WORKS
<L/R> : Updating displayed information

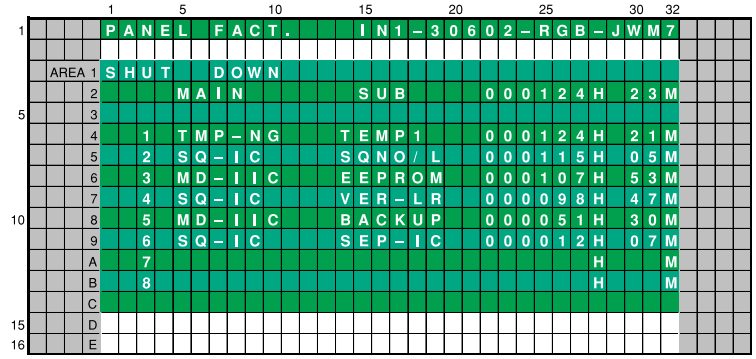
<Causes of power-down and corresponding OSD indications>

Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	X DRIVE Assy	XDRV
5V power for SCAN Assy	SCAN5V	DC/DC converter for X drive	X-DCDC
Y DRIVE Assy	YDRV	X-drive SUS circuit	X-SUS
DC/DC converter for Y drive	Y-DCDC	Specification inability	UNKNOWN
Y-drive SUS circuit	Y-SUS		

∗ When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.
∗ The power-down history is not recorded when the power-down occurred at the same place and same time.

8.2.2.4 SHUT DOWN

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1 SHUT DOWN
MAIN SUB 0001248H 23M
1 TMP-NG TEMP1 0001248H 21M
2 SQ-IC SQNO/L 0001157H 05M
3 MD-IIC EEPROM 0001077H 53M
4 SQ-IC VER-LR 0000098H 47M
5 MD-IIC BACKUP 0000051H 30M
6 SQ-IC SEP-IC 0000012H 07M
7 H M
8 H M

■ Key operation

<DOWN> : Shifting to PANEL-1 ADJ (+)
<UP> : Shifting to POWER DOWN
<L/R> : Updating displayed information

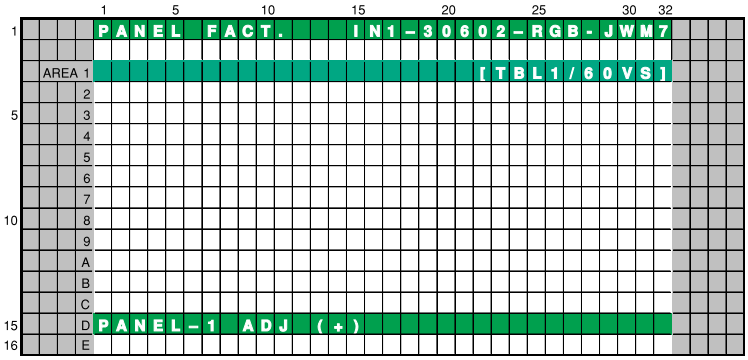
∗ When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.

<Cause of shut-down and corresponding OSD Indication >

Cause of shut-down (MAIN)		Cause of shut-down (SUB)	
Item	**OSD Indication**	**Item**	**OSD Indication**
Drive Processing IC	SQ-IC	Communication Error	RTRY
		Drive Stop	SQNO
		Communication Busy	BUSY
		Incoherent Version	VER-HS
MDU-IIC	MD-IIC	MAIN EEPROM Communication Error	EEPROM
		BACKUP EEPROM Communication Error	BACKUP
		DAC Communication Error	DAC
High temperature of the panel	TMP-NG	Temperature NG	TEMP

8.2.2.5 PANEL-1 ADJ (+)

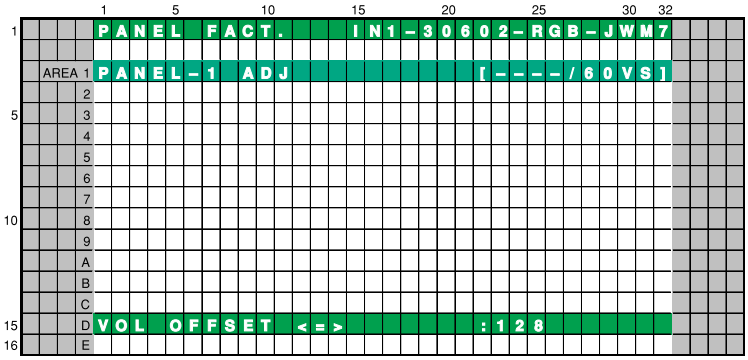
- Timing and voltage for the driving pulse are set. At third line of the screen, the WB (White Balance) table and frequency table indicating operation status are displayed, and at fifteenth line of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to PANEL-2 ADJ (+)
<UP> : Shifting to SHUT DOWN
<SET> : Shifting to the next nested layer

- When the screen is shifted to the next nested layer below, the item of the layer above is indicated at third line of the screen, and the item of the layer below is indicated at fifteenth line.
- The configuration of the menu screen is the same for any adjustment item that has lower layers.

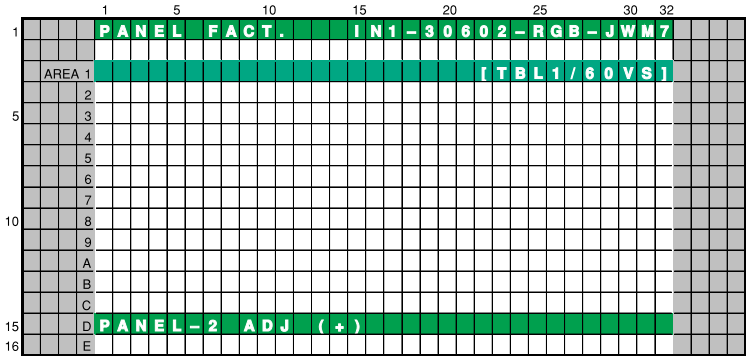


■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/ setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

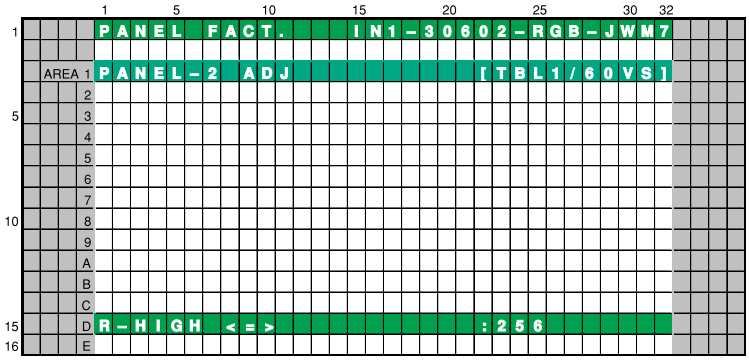
8.2.2.6 PANEL-2 ADJ (+)

- White balance can be adjusted by adjusting R, G, and B gain. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to PANEL REVISE (+)
<UP> : Shifting to PANEL-1 ADJ (+)
<SET> : Shifting to the next nested layer

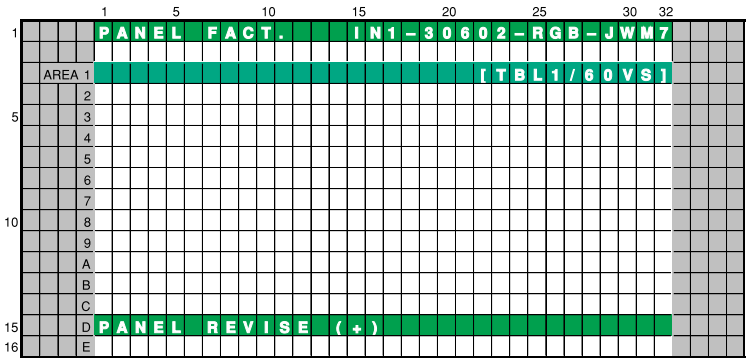


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/ setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

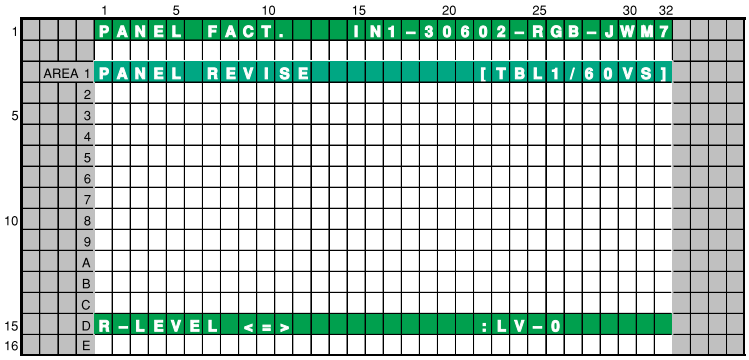
8.2.2.7 PANEL REVISE (+)

- A setting for panel degradation correction can be made. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to ETC.(+)
<UP> : Shifting to PANEL-2 ADJ (+)
<SET> : Shifting to the next nested layer

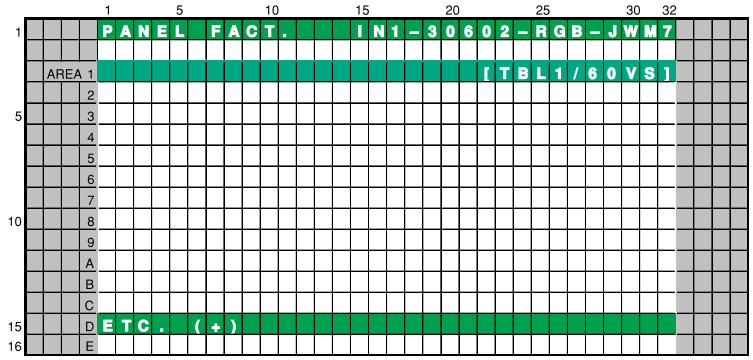


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

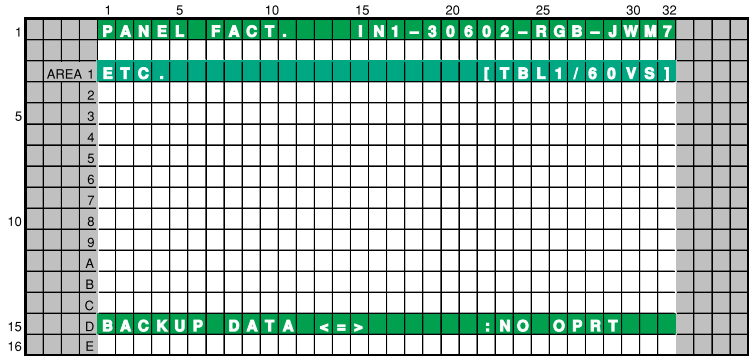
8.2.2.8 ETC. (+)

- The setting about the backup of panel adjusting value and various data on panel operational information can be cleared. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to RASTER MASK SETUP (+)
<UP> : Shifting to PANEL REVISE (+)
<SET> : Shifting to the next nested layer

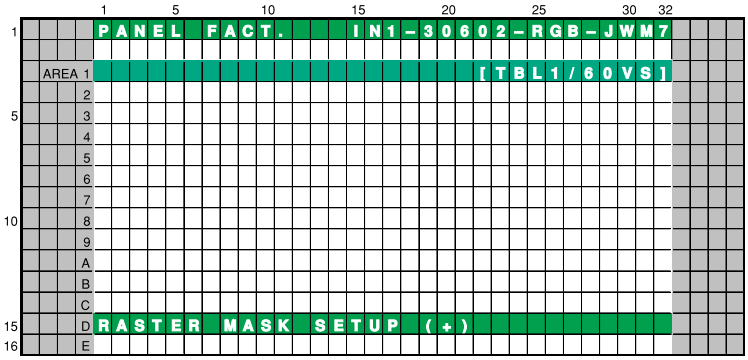


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

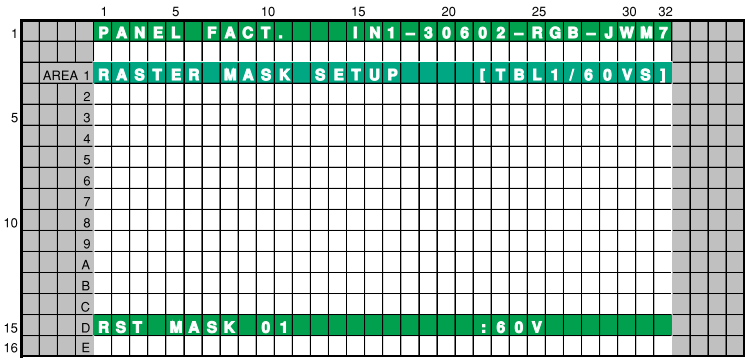
8.2.2.9 RASTER MASK SETUP (+)

- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to PATTEN MASK SETUP (+)
<UP> : Shifting to ETC. (+)
<SET> : Shifting to the next nested layer



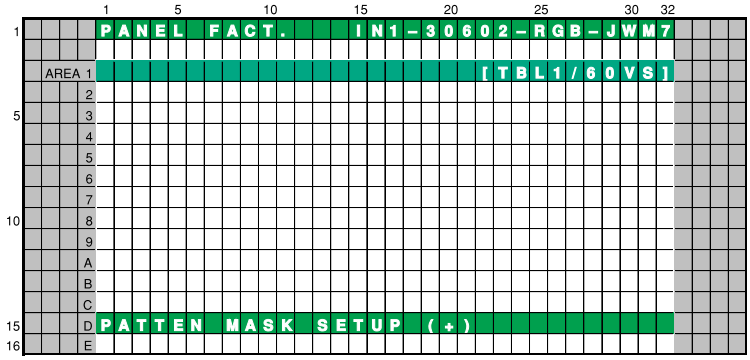
■ **Key operation**

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

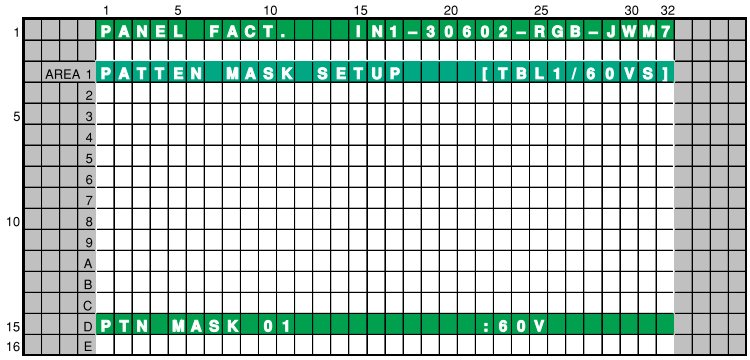
8.2.2.10 PATTEN MASK SETUP (+)

• This menu set the PATTEN MASK and the drive sequence at PATTEN MASK state.



■ **Key operation**

<DOWN> : Shifting to COMBI MASK SETUP (+)
<UP> : Shifting to RASTER MASK SETUP (+)
<SET> : Shifting to the next nested layer



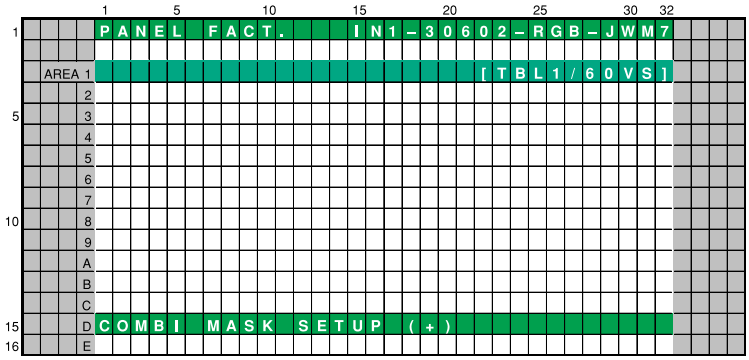
■ **Key operation**

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

• The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
• 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

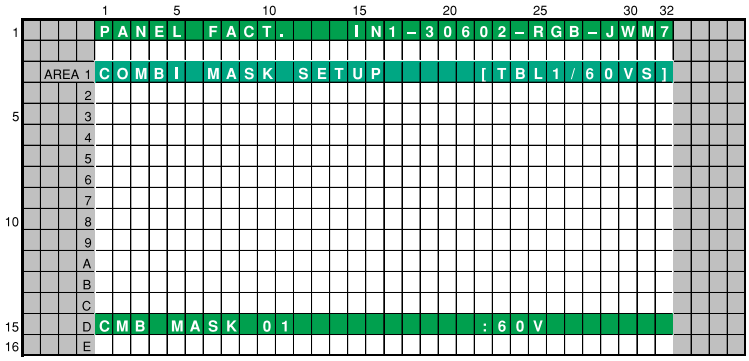
8.2.2.11 COMBI MASK SETUP (+)

• This menu set the COMBI MASK and the drive sequence at COMBI MASK state.



■ **Key operation**

<DOWN> : Shifting to PANEL INFORMATION
<UP> : Shifting to PATTEN MASK SETUP (+)
<SET> : Shifting to the next nested layer



■ **Key operation**

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

• The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
• 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

8.2.3 OPTION MODE

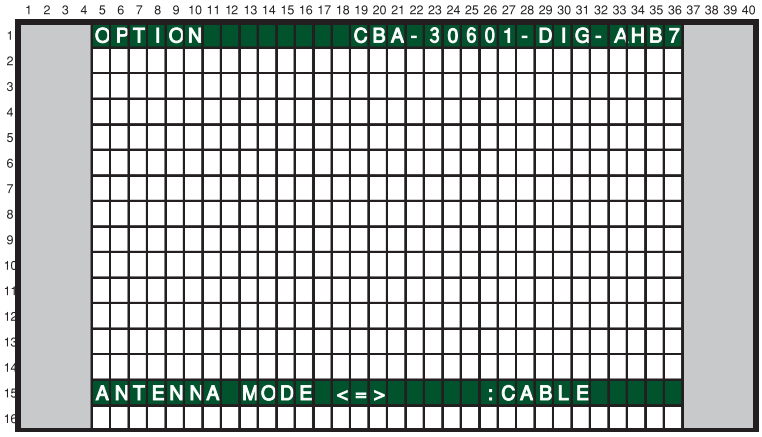
■**Operation item**

No.	Function/Display	Content	RS232C
8.2.3.1	EDID WRITE MODE ⇔	DISABLE ⇔ ENABLE	-
8.2.3.2	ANTENNA MODE ⇔	CABLE ⇔ AIR	-
8.2.3.3	AFT ⇔	Controls AFT action by turing ON / OFF	-

8.2.3.1 EDID WRITE MODE

Exclusively used for production line.

8.2.3.2 ANTENNA MODE



Receiving Cable/Air signal with equipped/unequipped DTB tuner.

① When DTV tuner is equipped
It is effective during tuner function only (others are gray-downed). The currently viewed ANT A/ANT B function's cable/air (both analog and digital) signal are changed. The channel settings are memorized (memorized by DTV side).

② When DTV tuner is unequipped
It is possible for ANT A/ANT B function to receive air/cable signal.
Channel settings are not memorized. But after leaving factory mode, the settings are maintained.
If the air/ cable signal is changed, the reserved allocation map is written.
For example, if the signal is changed to air, then the air's broadcast map is configured, and cable's broadcast map is destroyed.
If the signal is changed to cable, then the cable's broadcast map is configured, and air's broadcast map is destroyed.

OSD display	Funcrion	Control device
CABLE	Change the antenna setting to cable	
AIR	Change the antenna setting to air	

8.2.3.3 AFT

Exclusively used for production line.

8.2.4 INITIALIZE MODE

■ **Operation item**

No.	Display	Content	RS232C
8.2.4.1	SYNC DET(+)	Exclusively used for technical analsyis.	-
8.2.4.2	SG MODE	Paired SG_MODE with SG_PATTERN. Select SG Route.	-
8.2.4.3	SG PATTERN	Paired SG_MODE with SG_PATTERN. Select SG Pattern.	-
8.2.4.4	SIDE MASK LEVEL(+)	Configure the color of the side mask.	BSL GSL RSL
8.2.4.5	FINAL SETUP(+)	Initialize flash memorys on virgin product status	FST
8.2.4.6	HMG/HG SERVICE MODE	Enter HMG/HG SERVICE MODE	-
8.2.4.7	CVT AUTO	Exclusively used for technical analsyis.	-
8.2.4.8	HDMI INTR POSITION(+)	Exclusively used for technical analsyis.	-

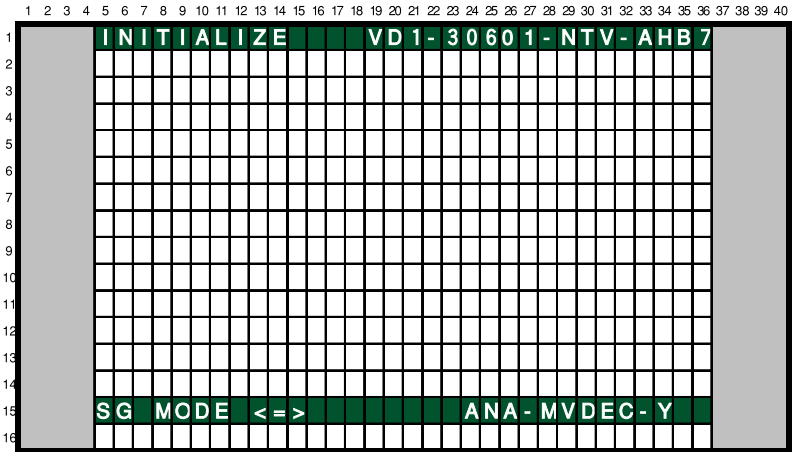
Note : When there is an altered history due to an open TRAP SW, if the "DISPLAY" key is held for at least 5 seconds on the above menu, the altered history will be cleared and the unit will be back to normal.

8.2.4.1 SYNC DET(+)

Exclusively used for technical analsyis (details omitted).

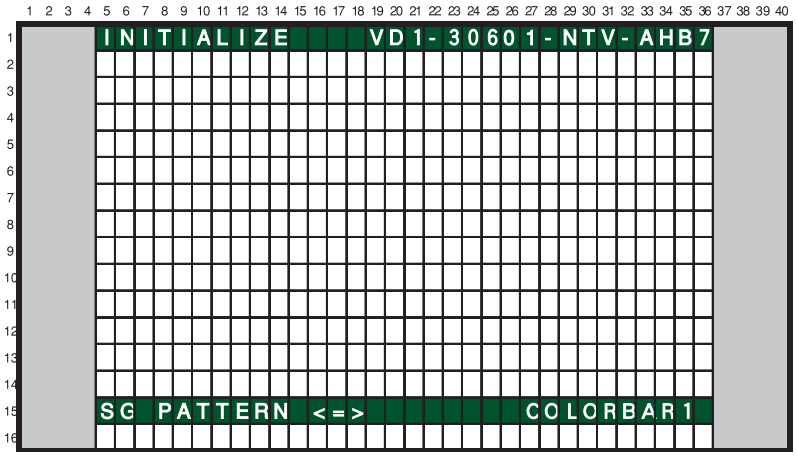
8.2.4.2 SG MODE

SG MODE (SG's route selection)/SG PATTERN (signal pattern selection) are used as pair. In SG MODE, select the SG route and then select the SG pattern to be sent by the selected route. In SG MODE, make sure to select the route first.



No.	Display	Content
1	SG OFF	SG Mode is OFF.
2	DIG MVDEC YCBCR	MAIN VDEC: YCbCr (Digital output mode)
3	ANA MVDEC YCBCR	MAIN VDEC: YCbCr (Analog output mode)
4	ANA MVDEC Y	MAIN VDEC: Y (Analog output mode: SG VDEC return setting)
5	ANA AD YCBCR	AD: YCbCr
6	ANA AD RGB	AD: RGB

8.2.4.3 SG PATTERN

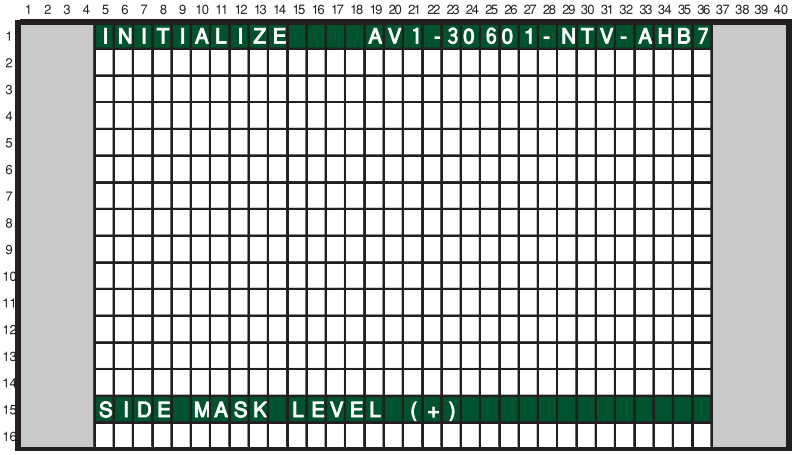


No.	Function/Display	SG Pattern(Brightness IRE Level/Color)
1	COLOR BAR1	Colorbar (75%)
2	COLOR BAR2	Colorbar (100%)
3	RAMP1	Ramp (100% white)
4	RAMP2	Ramp (100% Yellow)
5	RAMP3	Ramp (75% Green)
6	RAMP4	Ramp (75% Red)
7	RAMP5	Ramp (75% Blue)
8	RASTER1	Raster (100% White)
9	RASTER2	Raster (75% Yellow)
10	RASTER3	Raster (75% Cyanide)
11	RASTER4	Raster (75% Green)
12	RASTER5	Raster (75% Magenta)
13	RASTER6	Raster (75% Red)
14	RASTER7	Raster (75% Blue)
15	RASTER8	Raster (-% Black)
16	10STEP1	10STEP (100% white)
17	10STEP2	10STEP (100% Yellow)
18	10STEP3	10STEP (75% Green)
19	10STEP4	10STEP (75% Red)
20	10STEP5	10STEP (75% Blue)

■Notes when using SG MODE/SG PATTERN

- During factory mode, choose the correct route when changing.
- Basically, during VDEC SG output, make sure to connect SG output's Y or G to the AVI input terminal of VDEC.
- During SG MODE, turn off the blanking 50IRE setup function.
- During VDEC SG output, set the YC seperation setting to NTSC.
- It is possible to use ANALOG OUT MODE together during DIGITAL OUT MODE. The Main VDEC can output digital color difference, in which colors will appear. But the route to VDEC input cannot be analysed therefore care should be taken when using. Depending on the situation, please use the proper analog/digital output.
- The SG MODE outputs color difference and RGB only. Therefore, in the case of CVBS, only the Y input is used resulting in no color. This is not a damage result nor error.
- The SG MODE's ANA AD RGB (route to input 525i to AD by RGB) as a set's route, the setting does not exist. For this account the latter part from MVDEC does not have set values, resulting in having funny colors in colorbar, the brightness changes after switching, etc. This is not a damage result nor error.
- Depending on MVDEC's part version, ANA_MVDEC_YCBCR may not display colors.

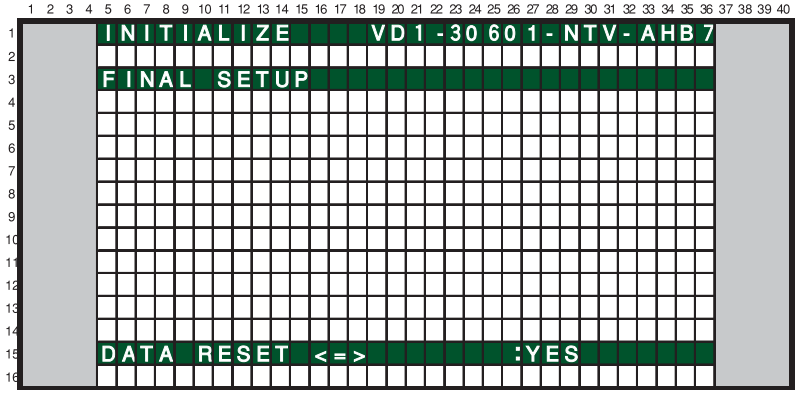
8.2.4.4 SIDE MASK LEVEL



To configure sidemask's R, G, B level (To adjust the values, input signal is required).

No.	Display	Content	RS232C
1	R MASK LEVEL ⇔	Adjust Side Mask R (Initial value : 80, Adjustable range: 000-255)	RSL
2	G MASK LEVEL ⇔	Adjust Side Mask G (Initial value : 80, Adjustable range: 000-255)	GSL
3	B MASK LEVEL ⇔	Adjust Side Mask B (Initial value : 80, Adjustable range: 000-255)	BSL

8.2.4.5 FINAL SET UP

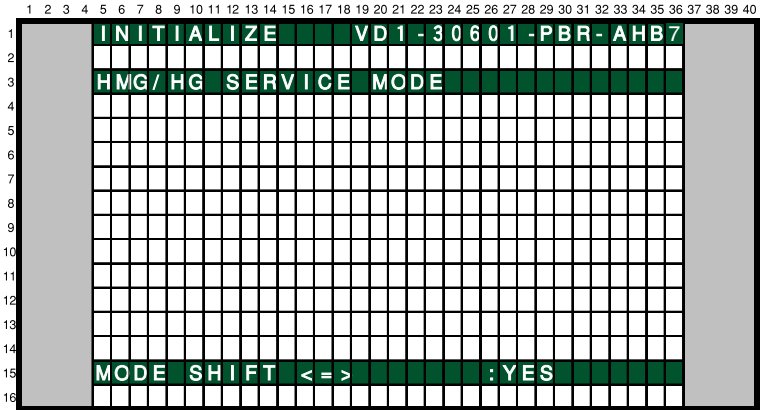


To reset each memory value sto factory default values. Factory command is "FST".
When the configuration is set to <NO> and the [SET] key is pressed, no action is taken and the menu returns to previous screen.
When the configuration is set to <YES> and the [SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.

When replacing the MAIN ASSY, the FINAL SETUP is required.

8.2.4.6 HMG/HG SERVICE MODE



The value of all memorized data are set to shipment status.
If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, HMG/HG SERVICE mode will be done.

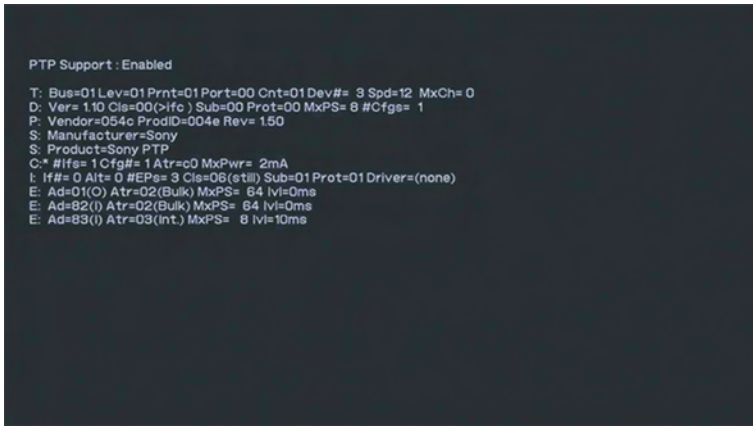
For ELITE model
Be sure to do above procedure at input fuction except HMG.

2nd FACTORY MODE

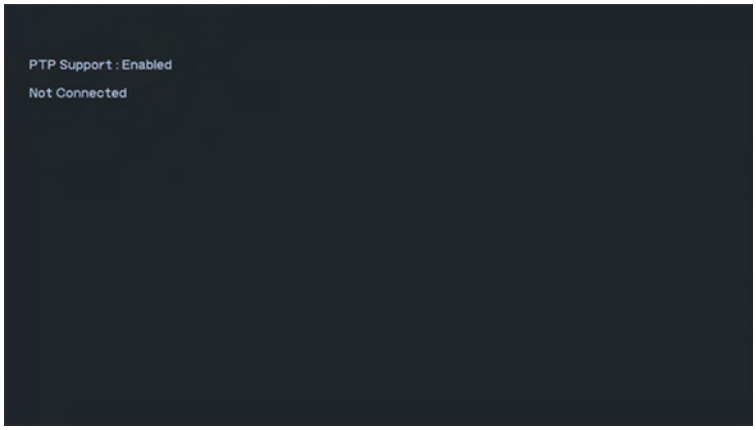
[Home Gallery] (Regular Model)

1. Home Gallery Screen

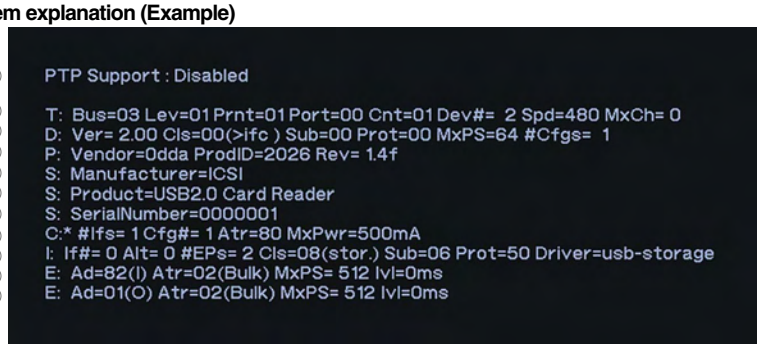
(1) When the device is connected


PTP Support : Enabled
T: Bus=01 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 3 Spd=12 MxCh= 0
D: Ver= 1.10 Cls=00(>ifc) Sub=00 Prot=00 MxPS= 8 #Cfgs= 1
P: Vendor=054c ProdID=004e Rev= 1.50
S: Manufacturer=Sony
S: Product=Sony PTP
C:* #Ifs= 1 Cfg#= 1 Atr=c0 MxPwr= 2mA
I: If#= 0 Alt= 0 #EPs= 3 Cls=06(still) Sub=01 Prot=01 Driver=(none)
E: Ad=01(O) Atr=02(Bulk) MxPS= 64 Ivl=0ms
E: Ad=82(I) Atr=02(Bulk) MxPS= 64 Ivl=0ms
E: Ad=83(I) Atr=03(Int.) MxPS= 8 Ivl=10ms

(2) When the device is not connected



(3) Each item explanation (Example)


① PTP Support : Disabled
② T: Bus=03 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 2 Spd=480 MxCh= 0
③ D: Ver= 2.00 Cls=00(>ifc) Sub=00 Prot=00 MxPS=64 #Cfgs= 1
④ P: Vendor=0dda ProdID=2026 Rev= 1.4f
⑤ S: Manufacturer=ICSI
⑥ S: Product=USB2.0 Card Reader
⑦ S: SerialNumber=0000001
⑧ C:* #Ifs= 1 Cfg#= 1 Atr=80 MxPwr=500mA
⑨ I: If#= 0 Alt= 0 #EPs= 2 Cls=08(stor.) Sub=06 Prot=50 Driver=usb-storage
⑩ E: Ad=82(I) Atr=02(Bulk) MxPS= 512 Ivl=0ms
⑪ E: Ad=01(O) Atr=02(Bulk) MxPS= 512 Ivl=0ms

① **PTP Support**

Disable	PTP Non-Support	String
Enable	PTP Support	String

② **T (Topology info)**

Bus	Bus Number	Decimal
Lev	Level in topology for this bus	Decimal
Prnt	Parent Device Number	Decimal
Port	Connector/Port on Parent for this device	Decimal
Cnt	Count of devices at this level	Decimal
Dev#	Device Number	Decimal
Spd	Device Speed in Mbps	Decimal
MxCh	Max Children	Decimal

③ **D (Device descriptor info)**

Ver	Device USB version	Hexadecimal
Cls	Device Class	Hexadecimal
Sub	Device Sub Class	Hexadecimal
Prot	Device Protocol	Hexadecimal
MxPS	Max Packet Size of Default Endpoint	Decimal
#Cfgs	Number Configurations	Decimal

④ **P (Product ID info)**

Vendor	Vendor ID code	Hexadecimal
ProdID	Product ID code	Hexadecimal
Rev	Product revision number	Hexadecimal

⑤ **S (String descriptor info - 1)**

Manufacturer		String

⑥ **S (String descriptor info - 2)**

Product		String

⑦ **S (String descriptor info - 3)**

SerialNumber		String

⑧ **C (Configuration descriptor info)**

#Ifs	Number of Interfaces	Decimal
#Cfg	Configuration Number	Decimal
Atr	Attributes	Hexadecimal
MxPwr	MaxPower in mA	Decimal

⑨ **I (Interface descriptor info)**

If#	Interface Number	Decimal
Alt	Alternate Setting Number	Decimal
#Eps	Number of Endpoints	Decimal
Cls	Interface Class	Hexadecimal(String)
Sub	Interface Sub Class	Hexadecimal
Prot	Interface Protocol	Hexadecimal
Driver	Driver name	String

⑩ **E (Endpoint descriptor info)**

⑪ **E (Endpoint descriptor info)**

Ad	Endpoint Address (I=In, O=Out)	Hexadecimal(String)
Atr	Attributes	Hexadecimal(String)
MxPS	Endpoint Max Packet Size	Decimal
Ivl	Interval (max) between transfers	Decimal

2. End method

It is the same as the case that Home Gallery displays.

9. RS-232C

9.1 OUTLINE OF THE RS-232C

9.1.1 PREPARED TOOLS

It is necessary to prepare the following one to use 232C command.

- PC
- Application for control
- 232C cable (straight)

∗ It is likely not to move correctly in Win 98 faction/Me and Win for foreign countries.

∗ The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

9.1.2 HOW TO SWITCH SR+/ RS-232C?

There are "How to switch SR+/RS-232C by remote control in Standby Mode" and "How to switch SR+/RS-232C by remote control in the INTEGRATOR MENU" as a Method

① **To select SR+/RS-232C by remote control in Standby Mode**

During Standby mode, the following operation is done within 10 seconds.
To select from SR+ to RS-232C/To select from RS-232C to SR+)
During standby mode, hold the [**VOLUME+(or-)**] key on the remote control unit pressed for 3-10 seconds. →Then within 3 seconds after the key is released, hold the [**2-screen**] key released, use the [**SET(ENTER)**] key on the remote control unit to set to RS-232C(the baud rate last selected is chosen) or the [**HOME MENU**] key to set to SR+

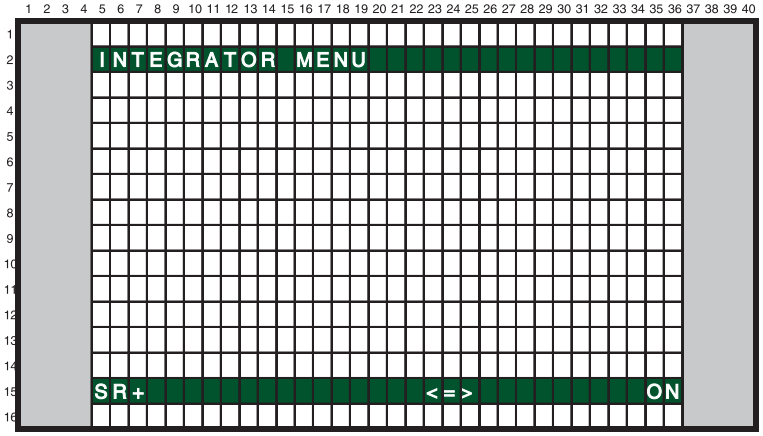
During IF Standby mode (once 10 seconds or more has passed after the LED goes dark during communication), the first key press may not be accepted. In such a case, for a key operation, first press any key other than the [**POWER**] key and [**CH**] keys, then the desired key.

At the switch SR+/RS-232C, the LED will be blinked on the fixed time.

② **To select SR+/RS-232C in the INTEGRATOR MENU**

How to enter INTEGRATOR MENU.
During standby mode, press the [**Home Menu**] key, and then press the [**POWER**] key within 3 seconds. Or during Factory mode, hold the [**INTEGRATOR**] key.

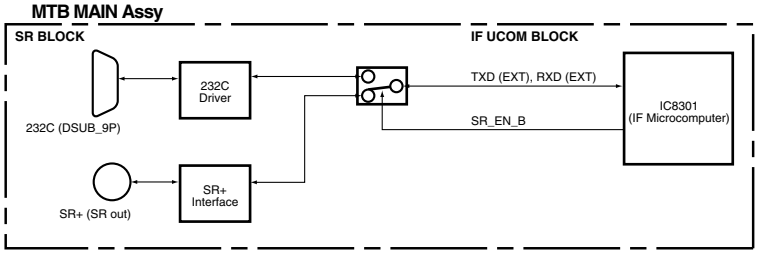
In INTEGRATOR MENU, there is a OSD where SR+(or RS-232C) is turned on/off, and it switches on the screen.



9.1.3 USING RS-232C COMMANDS.

For the PDP-4271HD/KUCXC, PDP-5071PU/KUCXC, PRO-940HD/KUCXC and PRO-1140HD/KUCXC series Plasma Displays, the circuitry is structured as shown in the diagram below to support the SR+ system. Controlling with either the SR+ system or RS-232C commands can be selected.
As the SR+ system is selected at shipment, to control with RS-232C commands in servicing it is necessary to switch the paths. After servicing, be sure to return the setting to the SR+ system.

● **Rough diagram of switching between SR+ and RS-232C**



9.1.4 COMMAND PROTOCOL

■Communication protocol : Asynchronous serial communication by RS-232C

Start bit length : 1 bit
Data width : 8 bit (ASCII code/ no distinction between upper case and lower case)
Parity : None
Stop bit length : 1 bit
Baud rate : 1200/2400/4800/19200/38400 bps (Initial value : 9600 bps)

■Adjustment function

Direct effectivity of numbers : When a number is transmitted after a command, an adjustment value can be directly set.

■Data format

The format of the control signal transmitted from the user side controller is as described below.
STX (02Hex) is arranged at the time of communication start and ETX (03Hex) is arranged at the time of data transmission complete, and ID, command and parameter are arranged in between. Data consists of ASCII type alphanumeric characters, and there is no distinction between the upper case and the lower case.

■In the case of command only
[single function command]

STX	ID	Command	ETX
0x02	**	□□□	0x03

■When setting/adjustment data is accompanied
[setting/adjustment command]

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

■Command processing

Command processing starts as soon as the command is entered.
ID shall be the two asterisks, "**".

■Confirmation of reception

The module microcomputer will make judgment to the command received from the main side, and if the command is judged to be an effective one, processing will be executed. When the system is in the standby status for the next command after completion of the processing, a reply to the received command is sent out. The data to be responded is a data in the upper case after deleting the ID code from the received command.

■When setting/adjustment data is accompanied

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

→ Reply data

STX	Command	Parameter	ETX
0x02	□□□	△△△	0x03

■In the case of command only

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→ Reply data

STX	Command	ETX
0x02	□□□	0x03

When responding, ERR is sent back if the command is unknown, and XXX is sent back if the command itself is valid but it cannot be processed because of its status.

■In the case of invalid command

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→ Reply data

STX	Command	ETX
0x02	ERR	0x03

■In the case of a command not executable due to its status

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→ Reply data

STX	Command	ETX
0x02	XXX	0x03

■Processing in the case of an error

If a communication error occurs between STX and ETX, processing of that command is stopped, and the reception buffer is cleared. In the command reception process, the character string transmitted after the receipt of STX are continued to be stored in the register, and by receipt of ETX, the character string sandwiched between STX and ETX is recognized as a command. If the prepared character string storage buffer (24 bytes including STX, ID and ETX) is exceeded, a reply will not be sent out.

9.1.5 DEFINITION OF COMMAND

■Single function command

It is a command that a command alone will complete an operation, and the command section consists of three characters.

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	PON	0x03

→

Reply data

STX	Command	ETX
0x02	PON	0x03

■Adjustment command and adjustment value

It is a command, accompanied by an adjustment value, to change the parameter value, and the command section is also three characters as in the case of a single function command. The adjustment value is a three character decimal numerical data within the range of 000-999. Incidentally, the adjustable range will be different depending on the function to be adjusted. (Be careful as it is not always up to 999.)

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	CNT	128	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	CNT	128	0x03

* XXX will be transmitted if the received command is exceeding the adjustable range of the adjustment value.
* When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■Setting command and setting value

It is a command, accompanied by a setting value, to change the setting value of the parameter, and the command section consists of three characters. The setting value consists of three characters, and the first character is fixed to S and the remaining two characters are decimal numbers within the range of S00-S99.

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	MKS	S02	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	MKS	S02	0x03

* XXX will be transmitted if the received command does not exist as a setting value.
* When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■Status acquisition (QUEST) command

This is a command to report the operational status and the setting value to the system side.
When a command is received from the system side, an applicable content depending on the type of command is read out from the memory and sent back.
The command section consists of three characters, and the first character is fixed to Q. The second character and on are set depending on the content of the information.
When sending back a reply data, the received command, various data converted to ASCII code and checksum of that data are added and sent.
The data length will be subject to each individual specification as the content of a reply will be different depending on the type of QUEST command.

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	QS1	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	QS1	•••••••••	0x03

9.2 LIST OF RS-232C COMMANDS

RS-232C commands can be used in Service Factory mode. Before using RS-232C commands, it is necessary to change the factory presetting. See "6.5.1 OUTLINE OF THE RS-232C".

[Note ; If you want to see version infomation (ex. QS1, QS6, Factory, Menu), Please see 10 seconds after starting.]

■ RS-232C command list

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
A							
ABL	***	Adjusting the upper limit of the power	●		Mod	●	
AMT	S00	Cancelling the Audio mute		●			
	S01	Cancelling the Audio mute		●			
APW	S00	WB correction interlocked with APL: OFF	●			●	
	S01	WB correction interlocked with APL: ON	●			●	
B			**MDU**	**MTB**			
BCP		Copying the backup data in the EEPROM	●			●	
BHI	***	User white balance : BLUE highlight	●				
BLW	***	User white balance : BLUE lowlight	●				
BRT	***	User brightness	●				
BSM	S00	After image/Burning safe mode: OFF	●				
	S01	After image/Burning safe mode: ON	●				
BSL		Adjusting Side Mask Level BLUE		●			
C			**MDU**	**MTB**			
CBU		Clearing backup data of EEPROM	●			●	
CHM		Clearing data of the hour meter	●			●	
CHN	FWD	Changing tuner preset channel (1 step forward)		●			
	REV	Changing tuner preset channel (1 step reverse)		●			
CHR		Clearing data of the hour meter of MTB side		●		●	
CNT	***	User contrast	●				
CMT		Clearing data of the maximum temperature	●			●	
CPC		Clearing power-on count data	●			●	
CPD		Clearing power-down histrory	●			●	
CPM		Clearing data of the pulse meter	●			●	
CSD		Clearing shutdown history	●			●	
CTM		Clearing working log	●			●	
D			**MDU**	**MTB**			
DRV	S00	Main power off	●				
	S01	Main power on	●				
DW*		To subtract *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			
E			**MDU**	**MTB**			
ESV	S00	Setting Power Consumption mode to normal sequence & normal curve	●				
	S01	Setting Power Consumption mode to silent sequence & normal curve	●				
	S02	Setting Power Consumption mode to silent sequence & power-saving curve	●				
F			**MDU**	**MTB**			
FAJ		Determining the flag of the DIGITAL Assy adjustment in "adjustment is completed"	●			●	
FAN		Factory mode off	●	●		●	
FAY		Factory mode on	●	●			
FST		Set each memory setting of MTB side to the shipment state.		●			
G			**MDU**	**MTB**			
GHI	***	User white balance : GREEN highlight	●				
GLW	***	User white balance : GREEN lowlight	●				
GSL		Green side mask level adjustment		●		●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
I							
INA	***	Terrestrial analog signal switched by tuner (ANTENNA A)		●		●	
	***###	Switching the terrestrial digital signal (ANTENNA A) and terrestrial analog signal		●			
	***	Switching the terrestrial analog signal (ANTENNA A)		●			
INB		Switching the terrestrial analog signal (ANTENNA B)		●			
INH		Switching SD card/PCMCIA card		●			
INP	S01	Input switch: INPUT 1		●			
	S02	Input switch: INPUT 2		●			
	S03	Input switch: INPUT 3		●			
	S04	Input switch: INPUT 4		●			
	S05	Input switch: INPUT 5 (JP/US/EU(Step-up) /IBD)		●			
	S06	Input switch: INPUT 6 (JP/US/EU(Step-up) /IBD)		●			
	S07	Input switch: INPUT 7 (JP/US)		●			
M			**MDU**	**MTB**			
MKC	S00	MASK off	●		Mod	●	
	S01	H ramp (slant 1) M	●		Mod	●	
	S02	H ramp (slant 4) M	●		Mod	●	
	S03	Slanting ramp M	●		Mod	●	
	S04	30 for aging	●		Mod	●	
	S05	05 for aging	●		Mod	●	
	S06	Erasing afterimage 1	●		Mod	●	
	S07	Erasing afterimage 2 (RGB: zigzag, V: reverse)	●		Mod	●	
	S08	White (change in luminance level)	●		Mod	●	
	S09	PEAK SEEK RASTER	●		Mod	●	
	S10	For engineering use	●		Mod	●	
MKS	S00	MASK off	●		Mod		
	S01	H ramp (slant 1)	●		Mod	●	
	S02	H ramp (slant 4)	●		Mod	●	
	S03	V ramp (slant 1)	●		Mod	●	
	S04	Slanting ramp	●		Mod	●	
	S05	Window (Hi= 870, Lo= 102)	●		Mod	●	
	S06	Window (Hi= 1023, Lo= 102)	●		Mod	●	
	S07	Window (Hi= 1023)	●		Mod	●	
	S08	Window (Hi= 1023) 4 %	●		Mod	●	
	S09	Window (Hi= 1023) 1.25 %	●		Mod	●	
	S10	Window (1/7 LINE)	●		Mod	●	
	S11	STRIPE (MGT/GRN)	●		Mod	●	
	S12	STRIPE (GRN/MGT)	●		Mod	●	
	S13	B & W, checker (1 line)	●		Mod	●	
	S14	B & W, checker (2 lines)	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MKS	S15	B & W, checker (4 lines)	●		Mod	●	
	S16	B & W, checker (8 lines)	●		Mod	●	
	S17	COLOR BAR	●		Mod	●	
	S18	Slanting lines	●		Mod	●	
	S19	Red & black, checker (1 line)	●		Mod	●	
	S20	Red & black, checker (2 lines)	●		Mod	●	
	S21	Red & black, checker (4 ines)	●		Mod	●	
	S22	Red & black, checker (8 lines)	●		Mod	●	
	S23	RGB zigzag, V reverse	●		Mod	●	
	S24	SUS 2000 pulses (black raster)	●		Mod	●	
	S25	Window (Hi= 870, Lo= 102) Pattern 3	●		Mod	●	
	S26	Window (Hi= 1023, Lo= 102) Pattern 3	●		Mod	●	
	S27	Window (Hi= 1023) Pattern 3	●		Mod	●	
	S28	Window (Hi= 1023) 4 % Pattern 3	●		Mod	●	
	S29	Window (Hi= 1023) 1.25 % Pattern 3	●		Mod	●	
	S30	Window (1/7 LINE) Pattern 3	●		Mod	●	
	S31	Noise ON - White	●		Mod	●	
	S32	Noise ON - Red	●		Mod	●	
	S33	Noise ON - Green	●		Mod	●	
	S34	Noise ON - Blue	●		Mod	●	
	S35	Noise ON - Black	●		Mod	●	
	S36	For engineering use	●		Mod	●	
	S37	For engineering use	●		Mod	●	
	S38	For engineering use	●		Mod	●	
	S39	For engineering use	●		Mod	●	
	S51	Raster - White	●		Mod	●	
	S52	Raster - Red	●		Mod	●	
	S53	Raster - Green	●		Mod	●	
	S54	Raster - Blue	●		Mod	●	
	S55	Raster - Black	●		Mod	●	
	S56	Raster - Cyan	●		Mod	●	
	S57	Raster - Magenta	●		Mod	●	
	S58	Raster - Yellow	●		Mod	●	
	S59	RASTER09: Red 588	●		Mod	●	
	S60	RASTER10: Cyan 460	●		Mod	●	
	S61	RASTER11: Green 774	●		Mod	●	
	S62	RASTER12: Gray 313	●		Mod	●	
	S63	RASTER13: Gray 912	●		Mod	●	
	S64	RASTER14: Magenta1023	●		Mod	●	
	S65	RASTER15: Pale orange	●		Mod	●	
	S66	RASTER16: Sky color	●		Mod	●	
	S67	RASTER17: Pale purple	●		Mod	●	
	S68	RASTER18: Magenta 54	●		Mod	●	
	S69	RASTER19: Red 1023+	●		Mod	●	
	S70	RASTER20: Green 1023+	●		Mod	●	
	S71	RASTER21: Blue 1023+	●		Mod	●	
	S72	RASTER22: Red 588+	●		Mod	●	
	S73	RASTER23: Green 588+	●		Mod	●	
	S74	RASTER24: Blue 588+	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MST	S00	Display one screen		●			
	S01	PsideP (Main size : normal)		●			
	S02	PinP (Right_down)		●			
	S03	PinP (Right_up)		●			
	S04	PinP (Left_up)		●			
	S05	PinP (Left_down)		●			
	S06	PsideP (Main size : center)		●			
	S07	PsideP (Main size : large)		●			
	S08	SWAP (Exchanging sub-screen)		●			
O			**MDU**	**MTB**			
OSD	S00	Turning OSD setting to off		●			
	S01	Turning OSD setting to on		●			
P			**MDU**	**MTB**			
PAV	S**	Switching panel functions interlocked with the AV selection	●				
PBH	***	Panel white balance adjustment - Blue highlight	●		Mod	●	
PBL	***	Panel white balance adjustment - Blue low light	●		Mod	●	
PDM	S00	Passing PD signals to the Power SUPPLY Unit => Power-down	●				
	S01	Not passing PD signals to the Power SUPPLY Unit => No power-down	●				
PFN		Factory mode: off	●			●	
PFS		Setup at shipment	●			●	
PFY		Factory mode: on	●			●	
PGH	***	Panel white balance adjustment - Green highlight	●		Mod	●	
PGL	***	Panel white balance adjustment - Green low light	●		Mod	●	
PGM	S**	Setting of the gamma table	●				
PMT	S00	Canceling panel muting	●				
	S01	Panel muting	●				
POF		Power off	●	●	Main		
PON		Power on	●	●	Main		
PPT	S00	Panel protection: off	●			●	
	S01	Panel protection: on	●			●	
PRH	***	Panel white balance adjustment - Red highlight	●		Mod	●	
PRL	***	Panel white balance adjustment - Red low light	●		Mod	●	
PUC	S00	Pure cinema: off	●	●		●	
	S01	Pure cinema: standard	●	●		●	
	S02	Pure cinema: advanced	●	●		●	
Q			**MDU**	**MTB**			
QAJ		Acquiring various adjustment values	●				
QIP		Acquiring various input signal data	●				
QMT		Acquiring temperature of MTB side and Fan speed		●			
QNG		Acquiring shut-down information of MTB side		●			
QPD		Acquiring logs of power-down points	●				
QPM		Acquiring data of the pulse meter	●				
QPW		Acquiring panel white balance adjustment values	●				
QS1		Acquiring unit data, such as the software version common to all models, regardless of destination	●	●			
QS2		Acquiring data on the status of the unit, such as temperature	●				
QS6		Acquiring unit data, such as the software version common to all models, regardless of destination		●			
QSD		Acquiring data on shutdown	●				

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
Q							
QSI		Acquiring data related with signals	●				
R			**MDU**	**MTB**			
RBL	S**	Setting of blue level for panel degradation correction	●		Mod	●	
RGL	S**	Setting of green level for panel degradation correction	●		Mod	●	
RHI	***	User white balance - Red highlight	●				
RLW	***	User white balance - Red low light	●				
RRL	S**	Setting of red level for panel degradation correction	●		Mod	●	
RSL	***	Adjustment of the Red side mask level		●		●	
RSW	***	Adjustment of the width of XY reset pulse 1	●		Mod	●	
RYW	***	Adjustment of the width of XY reset pulse 2	●		Mod	●	
S			**MDU**	**MTB**			
SDM	S00	Shutdown enabled	●				
	S01	Shutdown prohibited	●				
SFR	S01	Measures against AM radio noise - Pattern 1	●		Mod	●	
	S02	Measures against AM radio noise - Pattern 2	●		Mod	●	
	S03	Measures against AM radio noise - Pattern 3	●		Mod	●	
	S04	Measures against AM radio noise - Pattern 4	●		Mod	●	
	S05	Measures against AM radio noise - Pattern 5	●		Mod	●	
	S06	Measures against AM radio noise - Pattern 6	●		Mod	●	
	S07	Measures against AM radio noise - Pattern 7	●		Mod	●	
	S08	Measures against AM radio noise - Pattern 8	●		Mod	●	
SMM	S**	Setting of the effective area during streaking correction	●			●	
SN0	***	Setting of the serial No. 0 (panel)	●		Mod	●	
SN1	***	Setting of the serial No. 1 (panel)	●		Mod	●	
SN2	***	Setting of the serial No. 2 (panel)	●		Mod	●	
SN3	***	Setting of the serial No. 3 (panel)	●		Mod	●	
SN4	***	Setting of the serial No. 4 (panel)	●		Mod	●	
SZM	S00	Setting the screen size to Dot by Dot or PARTIAL		●			
	S01	Setting the screen size to 4 :3		●			
	S02	Setting the screen size to FULL or FULL1080i		●			
	S03	Setting the screen size to ZOOM		●			
	S04	Setting the screen size to CINEMA		●			
	S05	Setting the screen size to WIDE		●			
T							
–		–					
U			**MDU**	**MTB**			
UAJ		Determining the flag for the DIGITAL Assy adjustment in "not adjusted"	●				
UP*		To add *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
V							
VFQ	S01	Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
	S02	Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
	S03	Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
	S05	Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
	S06	Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
	S13	Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
	S14	Setting the frequency in Mask mode to PC-70 Hz	●		Mod	●	
	S22	Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
	S23	Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
	S25	Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
	S26	Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
VOF	***	Adjustment of the reference value of Vofs voltage	●			●	
VOL	UP*, DW*, ***	To adjust the volume (to be used in combination with UP*/DW*)		●			
VRP	***	Adjustment of the reference value of Vrst-p voltage	●			●	
VSU	***	Adjustment of the reference value of Vsus voltage	●			●	
W							
WBI	S00	Panel WB standard output mode: off	●			●	
WBI	S01	Panel WB standard output mode: on	●			●	
X							
XSB	***		●		Mod	●	
Y							
YSB	***	Y-SUS-B ADJ	●		Mod	●	
YTB	***	Y-SUSTAIL T2 ADJ	●		Mod	●	
YTG	***	Y-SUSTAIL T1 ADJ	●		Mod	●	
YTW	***	Y-SUSTAIL W ADJ	●		Mod	●	
Z							
ZME		Initializing the video EEPROM data		●		●	
ZPR		Initializing the setting data to which no adjustment command is provided	●			●	

9.3 OUTLINE OF RS-232C COMMANDS

9.3.1 ACQUISITION OF PANEL STATUS [QS1]

Model information and version information are returned.

Format	Effective Condition	Function	Remarks
[QS1]	Every time	Output of status	Reply Data : 105 Byte

Array		Size	Remarks
ECO		3	QS1 (Fixed)
1	Display Information 1	1	F
2	Display Information 2	1	7 : G7
3	Display Information 3	1	A : USA
4	Display Information 4	1	*
5	Display Information 5	1	B
6	MdUCon-Boot	3	01A
7	MdUcon-Prg	8	
8	Seq Prs-Boot	3	01A
9	Seq Prs-Prg	8	
10	SQ-VIDEO	4	
11	SQ-PC	4	
12	Panel Type	1	P/F
13	Reserved (*)	7	*******
14	, (Comma)	1	
15	MTB Information 1 (Generation)	1	7 : G7
16	MTB Information 2 (Regional model)	1	A : USA
17	MTB Information 3 (Grade)	1	H : Elite
18	MTB Information 4 (System Type)	1	B
19	Common Version for IF microcomputer.	4	
20	Common Version for Main microcomputer.	8	
21	Boot Version of Main microcomputer.	4	
22	Common Version for Multi-Processor.	8	
23	Boot Version of Multi-Processor.	4	
24	Reserved (*)	24	
25	Check Sum	2	FF

● MTB/MB-side's Information (15-24)	
IF uCON	Common Version of IF-uCON
Main uCon	Common Version of Main-uCON
Main uCon-Boot	Boot Version of Main-uCON
Multi-Pr s	Common Version of Multi-Processor Program.
Multi Prs-Boot	Boot Version of Multi-Processor Program.

1.Resolution/Inch Size	
3	1024*768/42
4	1024*768/43
5	1280*768/50
6	1365*768/50
7	1365*768/60
F	1920*1080/50

2. Panel Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● MTB/MB Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● Regional model	
J	JP
A	US
E	EU
G	GE
C	CH
U	AU

3. Grade	
*	Commonness
A	US (reserved)
E	EU (reserved)
J	Japan (reserved)

4. System Type	
*	Commonness
Z	Evaluation

● MTB/MB Product Form	
S	System model
B	One Body Model (SX)
M	Monitor (FHD)

● MTB/MB Grade	
H	Elite / DXA / Step-upD
T	Step-upA /XG / TXC / Re gula r (US)
B	Not used.(For Future)
S	Regular D
R	Regular A

● Panal Type	
P	the past
F	High-effective

● Panel Product Form	
S	System model
B	All-in-one design TV
M	Monitor
D	Standard module
E	Simple module

9.3.2 ACQUISITION OF PANEL OPERATION DATA [QS2]

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+23(DATA)+2(CS)= 28 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QS2
1	Notification of mode shifting to STB	1 Byte	1
2	Flag for adjustment of the main unit	1 Byte	0
3	Flag for adjustment-data backup	1 Byte	0
4	"1st PD" data	1 Byte	0
5	"2nd PD" data	1 Byte	0
6	Still picture detection	1 Byte	0
7	Reserved	2 Byte	**
8	Temperature data (TEMP 1)	3 Byte	128 (*1)
9	SD main data	1 Byte	0
10	SD sub data	1 Byte	0
11	Operation status induced by SD	1 Byte	0
12	Data from the hour meter	8 Byte	00000259 (*2)
13	MASK indication	1 Byte	0
CS		2 Byte	4A

Note : (*1) : The unit scale is centigrade. The data is A/D value from the thermal sensor.
(*2) : "00000259" of "Data from the hour meter" means 2 hours 59 minuts.

6: Still picture detection	
0	Normal screen
1	Still picture

9: SD main data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

10-1: SD-Sub (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

1: Notification of mode shifting to Standby	
0	Entering Standby mode failed
1	Entering Standby mode succeeded

2: Adjustment of the main unit	
0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup	
0	With backup data
1	No data (default)

4, 5: PD data	
0	No PD data
1	Not used
2	POWER
3	SCAN
4	SCN-5V
5	Y-DRV
6	Y-DCDC
7	Y-SUS
8	ADRS
9	X-DRV
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

10-2: SD-Sub (IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

10-3: SD-Sub (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

11: Operation status induced by SD	
0	Normal
1	Relay-off completed
2	During warning indication

13: MASK indication	
0	MASK-OFF
1	MASK-ON

9.3.3 ACQUISITION OF OTHER DATA ON THE PANEL [QIP]

The command QIP is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QIP]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+58(DATA)+2(CS)= 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QIP
1	SERIAL	15 Byte	- - - - - - - - - - - - - - -
2	HOUR METER	8 Byte	00000000
3	TOTAL HOUR METER	8 Byte	00000000
4	PON COUNTER	8 Byte	00000000
5	TEMP1 acquisition (Temperature value)	5 Byte	+23.5 (*1)
6	TEMP0 acquisition (Temperature value)	5 Byte	+28.7 (*1)
7	MAX-TEMP1 acquisition (Temperature value)	5 Byte	+78.3 (*1)
8	Reserved	4 Byte	****
CS		2 Byte	94

Note
(*1) : Centigrade scale

9.3.4 ACQUISITION OF PANEL ADJUSTMENT DATA (COMMON DATA) [QAJ]

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+41(DATA)+2(CS)= 46 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QAJ
1	V-SUS adjustment value	3 Byte	128
2	V-OFT adjustment value	3 Byte	128
3	V-RST-P adjustment value	3 Byte	128
4	Reserved	3 Byte	***
5	XSB adjustment value	3 Byte	128
6	YSB adjustment value	3 Byte	128
7	YTG adjustment value	3 Byte	128
8	YTW adjustment value	3 Byte	128
9	RSW adjustment value	3 Byte	128
10	YTB adjustment value	3 Byte	128
11	RYW adjustment value	3 Byte	128
12	R-REVICE setting value	1 Byte	0
13	G-REVICE setting value	1 Byte	0
14	B-REVICE setting value	1 Byte	0
CS		2 Byte	B7

• For each REVISE setting value, the level set for RRL, RGL, or RBL is transmitted as one character.

9.3.5 ACQUISITION OF ABL/WB ADJUSTMENT DATA [QPW]

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+35(DATA)+2(CS)= 40 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPW
1	Drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T2
4	ABL adjustment value	3 Byte	128
5	R-HIGH adjustment value	3 Byte	256
6	G-HIGH adjustment value	3 Byte	256
7	B-HIGH adjustment value	3 Byte	256
8	R-LOW adjustment value	3 Byte	512
9	G-LOW adjustment value	3 Byte	512
10	B-LOW adjustment value	3 Byte	512
11	Gamma setting	1 Byte	A
12	Streaking correction	1 Byte	1
13	Peripheral luminance correction	1 Byte	0
14	Reserved	1 Byte	*
15	WB interlocked with APL	1 Byte	0
16	Transition of protective operations	1 Byte	0
17	Reserved	2 Byte	**
CS		2 Byte	37

1: Drive sequence

48V	Video 48 Hz
50V	Video 50 Hz
60V	Video 60 Hz
72V	Video 72 Hz
75V	Video 75 Hz
60P	PC 60 Hz
70P	PC 70 Hz

2: Standard/ nonstandard

S	Standard
N	Nonstandard

3: Type of ABL/WB tables

Tn	n: 1 to 4

11: Gamma setting

n	0 to F

12, 15: Setting for Items 12 and 15

0	OFF
1	ON

13: Peripheral luminance correction

0	OFF
2	ON (interlocked with APL)

16: Transition of brightness by protective operations

0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.6 ACQUISITION OF PULSE METER VALUE [QPM]

The command QPM is for acquiring the accumulated number of pulses of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+40(DATA)+2(CS)= 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QPM
1	Pulse meter B 1	8Byte	00000000
2	Pulse meter B 2	8Byte	00000000
3	Pulse meter B 3	8Byte	00000000
4	Pulse meter B 4	8Byte	00000000
5	Pulse meter B 5	8Byte	00000000
CS		2Byte	E7

9.3.7 ACQUISITION OF PD LOGS [QPD]

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPD
1	Latest "1st PD" data	1 Byte	A
2	Latest "2nd PD" data	1 Byte	2
3	Data from the hour meter for the latest PD	8 Byte	00010020
4	Second latest "1st PD" data	1 Byte	E
5	Second latest "2nd PD" data	1 Byte	9
6	Data from the hour meter for the second latest PD	8 Byte	00008523
7	Third latest "1st PD" data	1 Byte	4
8	Third latest "2nd PD" data	1 Byte	3
9	Data from the hour meter for the third latest PD	8 Byte	00004335
10	Fourth latest "1st PD" data	1 Byte	2
11	Fourth latest "2nd PD" data	1 Byte	0
12	Data from the hour meter for the fourth latest PD	8 Byte	00000945
13	Fifth latest "1st PD" data	1 Byte	4
14	Fifth latest "2nd PD" data	1 Byte	0
15	Data from the hour meter for the fifth latest PD	8 Byte	00000715
16	Sixth latest "1st PD" data	1 Byte	A
17	Sixth latest "2nd PD" data	1 Byte	2
18	Data from the hour meter for the sixth latest PD	8 Byte	00000552
19	Seventh latest "1st PD" data	1 Byte	A
20	Seventh latest "2nd PD" data	1 Byte	0
21	Data from the hour meter for the seventh latest PD	8 Byte	00000213
22	Eighth latest "1st PD" data	1 Byte	D
23	Eighth latest "2nd PD" data	1 Byte	0
24	Data from the hour meter for the eighth latest PD	8 Byte	000001A7
CS		2 Byte	27

1, 2, 4, 5: PD data	
0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

9.3.8 ACQUISITION OF SD LOGS [QSD]

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QSD
1	Latest SD data	1byte	1
2	Latest SD subcategory data	1byte	0
3	Data from the hour meter for the latest SD	8byte	00752013
4	Second latest SD data	1byte	5
5	Second latest SD subcategory data	1byte	0
6	Data from the hour meter for the second latest SD	8byte	00495204
7	Third latest SD data	1byte	2
8	Third latest SD subcategory data	1byte	3
9	Data from the hour meter for the third latest SD	8byte	00100355
10	Fourth latest SD data	1byte	2
11	Fourth latest SD subcategory data	1byte	5
12	Data from the hour meter for the fourth latest SD	8byte	00075620
13	Fifth latest SD data	1byte	1
14	Fifth latest SD subcategory data	1byte	0
15	Data from the hour meter for the fifth latest SD	8byte	00000852
16	Sixth latest SD data	1byte	2
17	Sixth latest SD subcategory data	1byte	5
18	Data from the hour meter for the sixth latest SD	8byte	000000451
19	Seventh latest SD data	1byte	0
20	Seventh latest SD subcategory data	1byte	0
21	Data from the hour meter for the seventh latest SD	8byte	00000000
22	Eighth latest SD data	1byte	0
23	Eighth latest SD subcategory data	1byte	0
24	Data from the hour meter for the eighth latest SD	8byte	00000000
CS		2Byte	7D

● SD data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

● SD subcategory (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

● SD subcategory (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

● SD subcategory (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

9.3.9 QS6

Returning information of the Flash Device.

Format	Effective Condition	Function	Remarks
QS6	Every time	Output of Status.	

Order	Part	Data	Size	Context
0	-	Received Command Name	3 byte	QS6
1		DTV HARDWARE Version	8 byte	
2		DTV HARDWARE SERIAL	8 byte	
3		DTV RUNTIME Version	8 byte	
4		CFE VERSION	8 byte	
5		KERNEL Version	8 byte	
6		ROOTFS Version	8 byte	
7		FLAGS Information1	1 byte	
8		FLAGS Information2	1 byte	
9		FLAGS Information3	1 byte	
10		FLAGS Information4	1 byte	
11		FLAGS Information5	1 byte	
12		FLAGS Information6	1 byte	
13		CCD-UCOM Version	4 byte	
14		HMG/HG MODELE Version	10 byte	
15		USER PASSWORD	4 byte	
16	-	Check Sum	2 byte	

9.3.10 QMT

QMT : Returning information of temperature and FAN speed.

Format	Effective Condition	Function	Remarks
[QMT]	Every time	Output of status	MTB-side's temperature/FAN rotaing status

Order	Data	Size	Context
0	Received Command Name	3 byte	'QMT' only
1	MTB Temperature	3 byte	
2	MTB FAN Speed	1 byte	0: STOP 1:LOW 2:HIGH
3	Cjheck Sum	2 byte	

9.3.11 QNG

Returning data (logs keep on Main microcomputer) on shutdown of Multi-Tuner Base.

Format	Effective Condition	Function	Remarks
QNG	Every time	Output of status	

Order	Data	Size	Context
0	Received Command Name on MTB	3 byte	'QNG' only
1	Latest NG data	1 byte	
2	Data of subcategory for the latest NG	1 byte	
3	Data of MTB hour meter for the latest NG	7 byte	
4	Data of temperature for the latest NG	3 byte	
5	2'st latest NG data	1 byte	
6	Data of subcategory for the 2'st latest NG	1 byte	
7	Data of MTB hourmeter for the 2'st latest NG	7 byte	
8	Data of temperature for the 2'st latest NG	3 byte	
:	:	:	
29	8'st latest NG data	1 byte	
30	Data of subcategory for the 7'st latest NG	1 byte	
31	Data of MTB hour meter for the 7'st latest NG	7 byte	
32	Data of temperature for the 7'st latest NG	3 byte	

■Details of Data and subcategory

<SD Information No.>		
Data	Cause of shutdown	Remarks
0	Normal	
1	failure of communication to Module microcomputer	MODULE (immediately Shutdown)
2	3-wire serial communication of Main microcomputer	Go to subcategory ⇒ No.1
3	IIC communication failure of Main microcomputer & Unknown error	Go to subcategory ⇒ No.2
4	communication failure of Main micricomputer	MAIN (immediately Power Supply OFF)
5	FAN stopped	FAN (immediately Power Supply OFF)
6	Abnormally high temperature at MTB.	TEMP2 (After 30second warning, ture Power Supply off)
7	failure of Digital Tuner	Go to subcategory ⇒ No.3
8	failure of Power Supply	Go to subcategory ⇒ No.4
B	Speaker short-circuit	After 3second warning, turn Power Supply OFF

<No.1 Subcategory Information on "failure in 3-wire serial communication of Main microcomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	IF microcomputer communication failure	IF (immediately Power Supply OFF)
2	MANTA communication failure (MULTI1)	MULTI1 (immediately Power Supply OFF)
4	MANTA communication failure (I/P)	I/P
5	MANTA communication failure (D-SEL)	D-SEL

<No.2 Subcategory Information on "failure in IIC communication of Main mircocomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Analog Tuner 1 (Front End 1)	FE1 (immediately Power Supply OFF)
2	Analog Tuner 2 (Front End 2)	FE2 (immediately Power Supply OFF)
3	MPX	
4	AV Switch	AV-SW (immediately Power Supply OFF)
5	RGB Switch	RGB-SW (immediately Power Supply OFF)
6	CCD	CCD (immediately Power Supply OFF)
8	Main VDEC	M-VDEC (immediately Power Supply OFF)
A	AD/PLL	ADC (immediately Power Supply OFF)
B	HDMI	HDMI (immediately Power Supply OFF)
G	64k EEPROM	MA-FEP (immediately Power Supply OFF)
H	AUDIO IC	

<No.3 Subcategory Information on "Digital Tuner">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Failure to DTB Starting	PS/RST(immediately Power Supply OFF)
3	DTV Device Error	Device (immediately Power Supply OFF)
5	TV-Guide Error	TV-G (immediately Power Supply OFF)
7	Home Gallery Application comunication error.	HOME-G (communication error (Retry 16 times) →Do not return after 2 times of soft reset)

<No.4 Subcategory Information on "POWER">		
Data	Cause of shutdown	Remarks
1	DCDC Converter Power Supply reduced	M-DCDC (immediately Power Supply OFF)
2	Relay Power Supply reduced	RELAY (immediately Power Supply OFF)

9.3.12 ACQUISITION OF INPUT SIGNAL DATA [QSI]

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO)+66(DATA)+2(CS)= 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	Detection of V frequency	4 Byte	6002
14	Detection of existence of H	1 Byte	Y
15	Reserved	3 Byte	***
16	Obtained APL data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	0
23	Reserved	4 Byte	****
CS		2 Byte	27

14: Detection of existence of H	
N	No H
Y	H detected

18 to 20: Each protection operation status	
0	Setting OFF
1	Setting ON (waiting)
2	Setting ON (during operation)

22: Transition of brightness by protection operation	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.13 DRV

Drive ON/OFF : ON/OFF control for only the large-power system

Format	Effective Condition	Function	Remarks
[DRV+S00]	Every time	DRIVE OFF	At standby mode, when 10 seconds passed after issuing [DRV+S00], command becomes invalid.
[DRV+S01]		DRIVE ON	

9.3.14 COMMANDS FOR PROHIBITION/PERMISSION OF DTV/MOMENET COMMUNICATION

■ Commands for prohibition/permission of DTV/HomeNet communication

Control device: DTV & HomeNet
Memory: ON/OFF of DTV communication prohibition mode
Applicable models: Only for models for North America

■ Functions

This is a command for forcibly prohibiting communication with DTV (for Elite series panels, communication using HomeNet is included).

Normally, after the panel and the connected DTV are turned on, any operation is prohibited on the panel until startup of the DTV is completed. However, on the production line, to avoid a drain on productivity, such waiting time must be shortened. Thus, for the processes where the DTV is not necessary, such as panel adjustment, the existence of the DTV can be ignored, to shorten waiting time.

■ Commands

DTN	S00	To exit DTV/HomeNet Communication
	S01	To enter DTV/HomeNet Communication

■ Operations

[DTNS01]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Prohibition mode must be stored in memory.
- The blue LED flashes rapidly to indicate that DTV/HomeNet Communication Prohibition mode is active.

- The next resetting of the main microcomputer is canceled, the main microcomputer judges that DTNS01 is established, then communication with DTV/HomeNet will be prohibited. In such a case, any user operations (FAY command, etc.) entered immediately after the unit is turned on must be effective. Also, any operations other than DTV/HomeNet operations must be effective in the same way as during DTNS00.

[DTNS00]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Permission mode must be stored in memory.
- It is not necessary to immediately restore communication with DTV/HomeNet. DTV/HomeNet communication must be restored until resetting of the main microcomputer is canceled next time.

■ Supplement

- While ZACS01 is established, the LED for ZAC flashes. The priority of LED indications is as follows:
  PD > Trap-SW > DTV_STB > SD > ZAC >DTN > no backup copy > Standalone operation of the Assy > Normal ON/OFF
- Even if DTNS00 is established, if ZACS01 is established, DTV/HomeNet communication must be prohibited.

9.3.15 SETTING FOR FACTORY MODE PERMISSION / PROHIBITION [FAY /FAN]

The commands FAY/FAN are for prohibiting/permitting panel-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjust command is valid.	Mask indications will be forcibly turned off.
[FAN]	During FAY	Adjust command is invalid.	

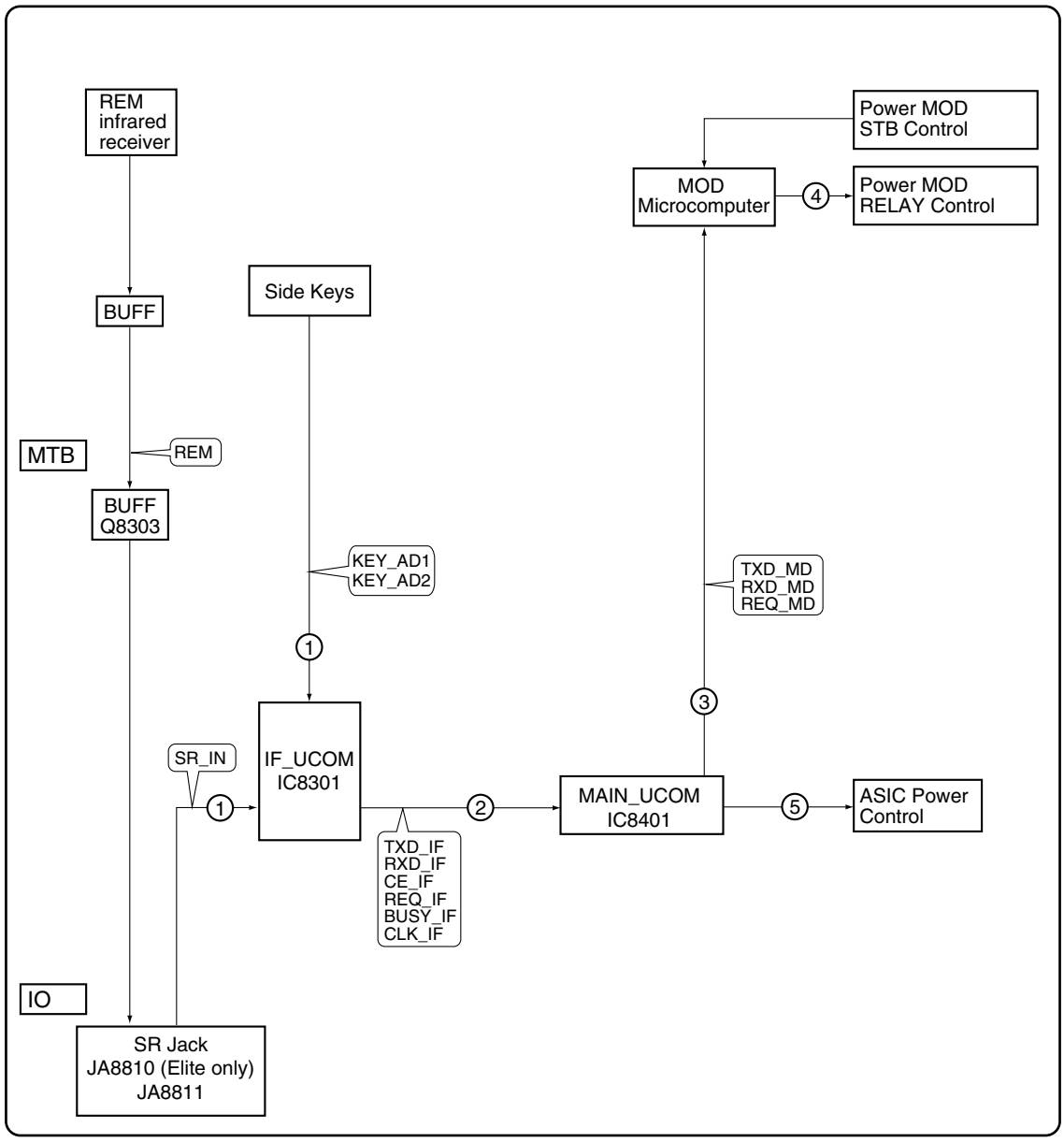
9.3.16 BACKUP FUNCTION FOR ADJUSTMENT VALUE FOR THE MAIN UNIT [FAJ /UAJ /CBU / BCP]

When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation			Remarks
	Effective Operation Modes	Control		
[FAJ]	During FAY	To make the flag setting that indicating that adjustment of the panel unit has been completed	Writing 00 to the 4 k byte ROM and copying to the 2 k byte ROM	This takes at least 350 ms.
[UAJ]		To make the flag setting that indicating that adjustment of the main unit has not been completed	Writing F0 to the 4 k byte ROM	
[CBU]		To make the flag setting that indicating that backup data have not been copied	Writing F0 to the 2 k byte ROM	The backup ROM is initialized.
[BCP]		To copy Digital backup data to EEPROM	Copying backup data	

10. GENERAL INFORMATION

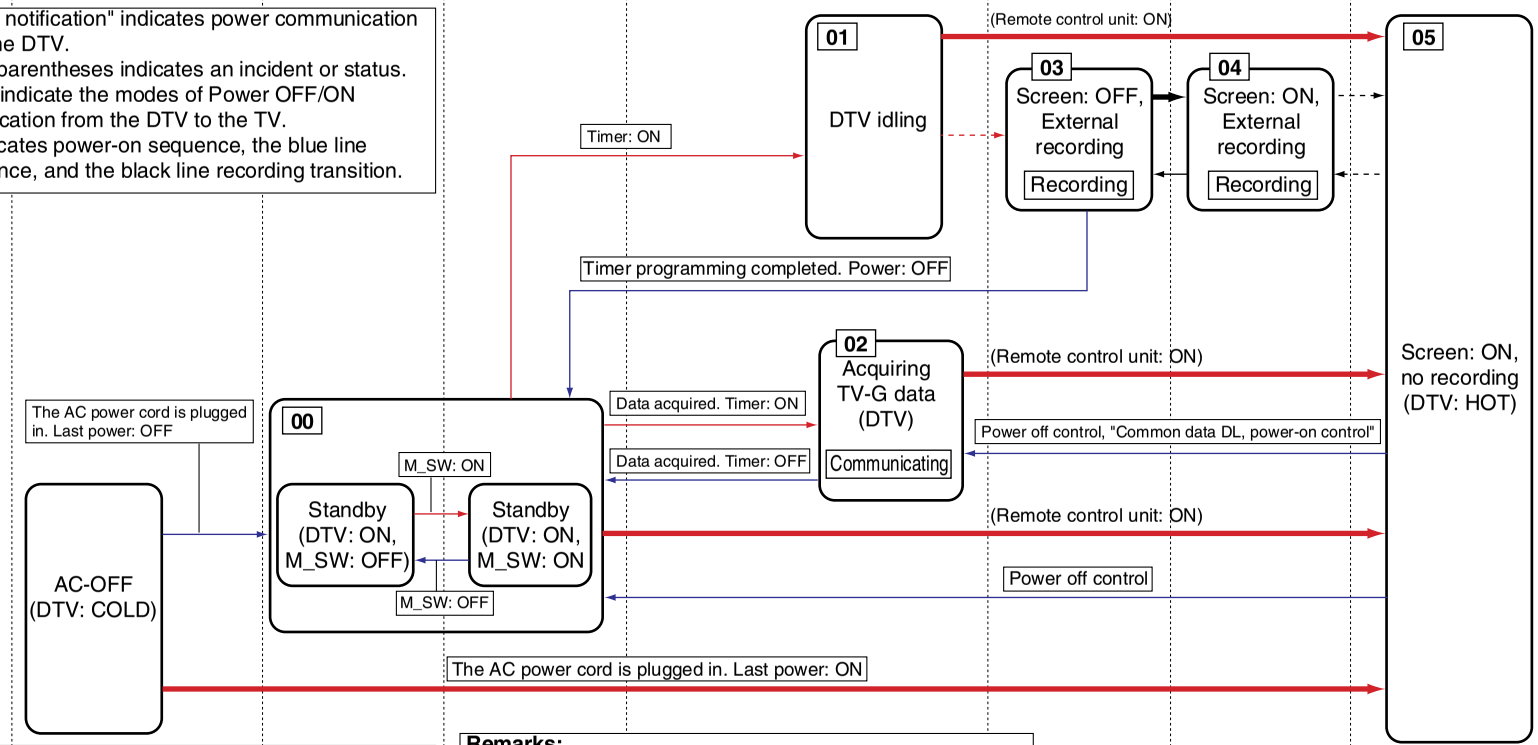
10.1 POWER ON SEQUENCE



① : The remote control (or KEY) signal is input to the IF microcomputer.
② : The IF microcomputer sends the operation data to the main microcomputer.
③ : The main microcomputer issues a startup command (PON) to the MOD microcomputer.
④ : The MOD microcomputer controls the relay of the power MOD of the PDP to startup the power of the PDP.
⑤ : The main microcomputer controls the ASIC power within the MTB to startup the power of the MTB.

	AC-OFF (AC power cord unplugged)	DTV Active (M_SW: OFF)	DTV Active (M_SW: ON)			Fully Active	
Power LED	OFF	OFF	Standby (red LED)			Power ON (blue LED)	
PDP	OFF	OFF	OFF	OFF	OFF	ON (PDP indication)	
PSW1	OFF	OFF	OFF	OFF	OFF	ON (VDEC & ASIC ON)	
Power control	OFF	OFF (POF)	OFF (POF)	OFF (POF)	OFF (POF)	PON (DTV+AV_ON)	
Main microcomputer	OFF	ON	ON	ON (main microcomputer ON)			
IF microcomputer	OFF	ON	ON	ON (IF microcomputer ON)			
DTV	(Power interrupted: COLD)		WARM		External recording: WARM	Recording: HOT	HOT

- "Power ON/OFF notification" indicates power communication from the TV to the DTV.
- A description in parentheses indicates an incident or status.
- Boxed numbers indicate the modes of Power OFF/ON completion notification from the DTV to the TV.
- The red line indicates power-on sequence, the blue line power-off sequence, and the black line recording transition.



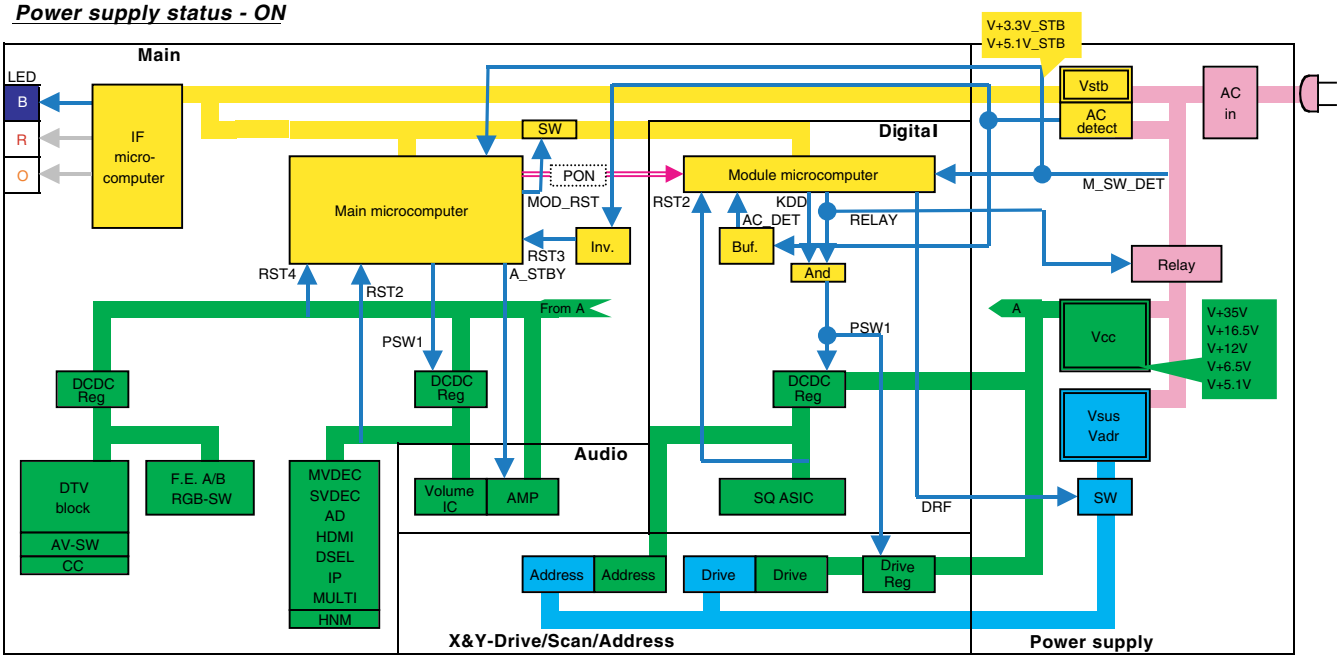
- If a timer recording is programmed to be started within 2 minutes after another timer recording is finished, the numbers change 05, 04, then 05, in that order.
- If several timer recordings are programmed consecutively, the number remains 03, and only the locked channel numbers change.
- While M_SW_DET is off, the transitions from 01 to 05, 01 to 03, and 02 to 05 are prohibited.

Remarks:
- The main microcomputer manages last power ON/OFF.
- Standby comprises Function Standby and Timer Standby.

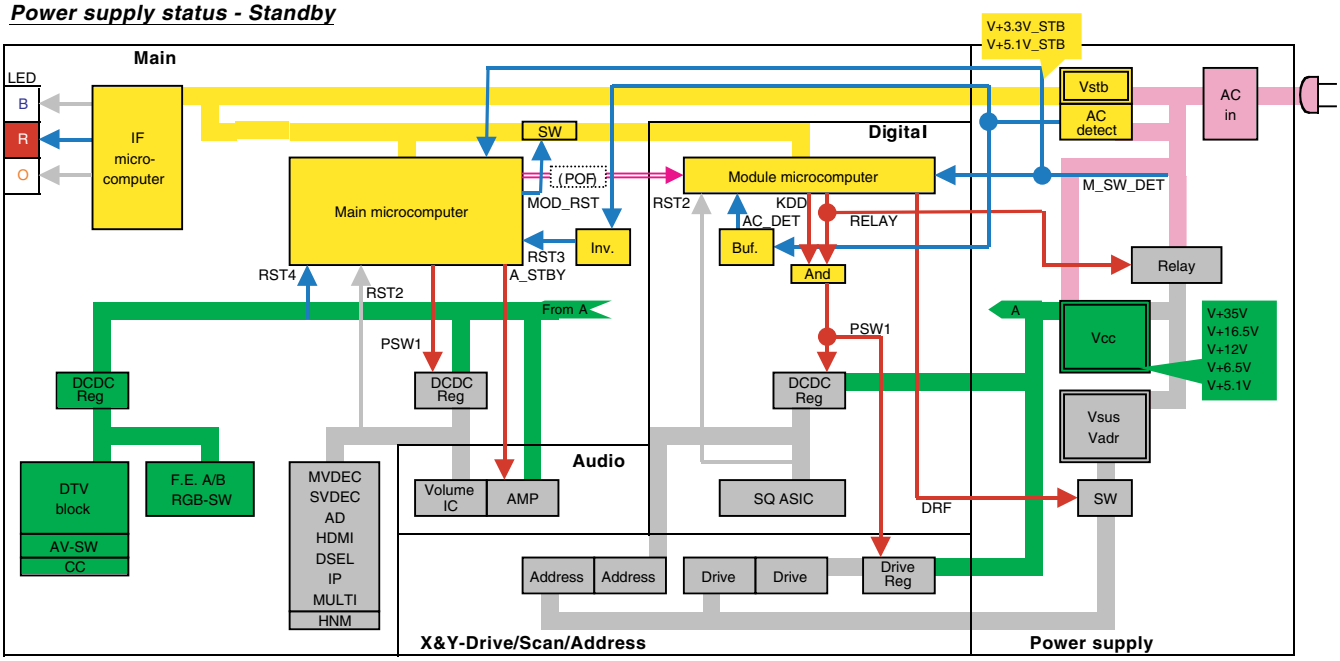
03: Acquiring data
- Acquiring SI data
- Acquiring logo data
- Acquiring TV-GUIDE data
- Acquiring clock data (TOT)

: Spontaneous internal transition
: Spontaneous internal transition
: Power interrupted
: Only the screen is off
: Reset start
: Screen power on
: Screen power on

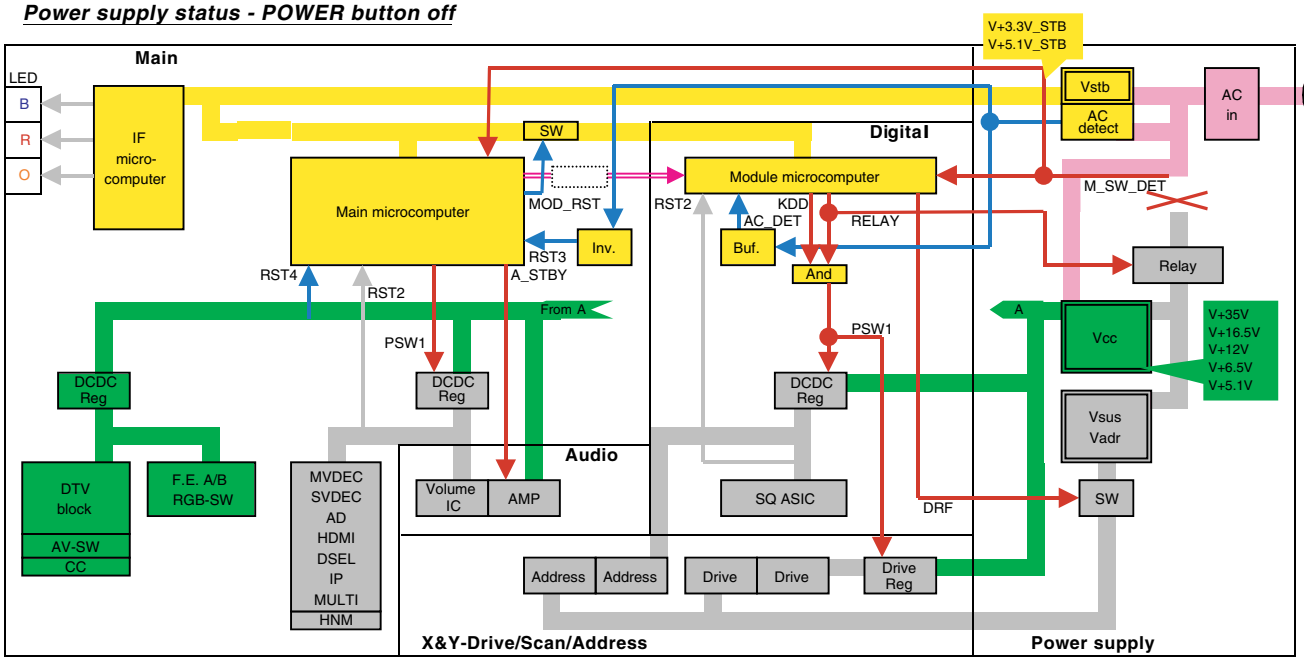
Power supply status - ON



Power supply status - Standby

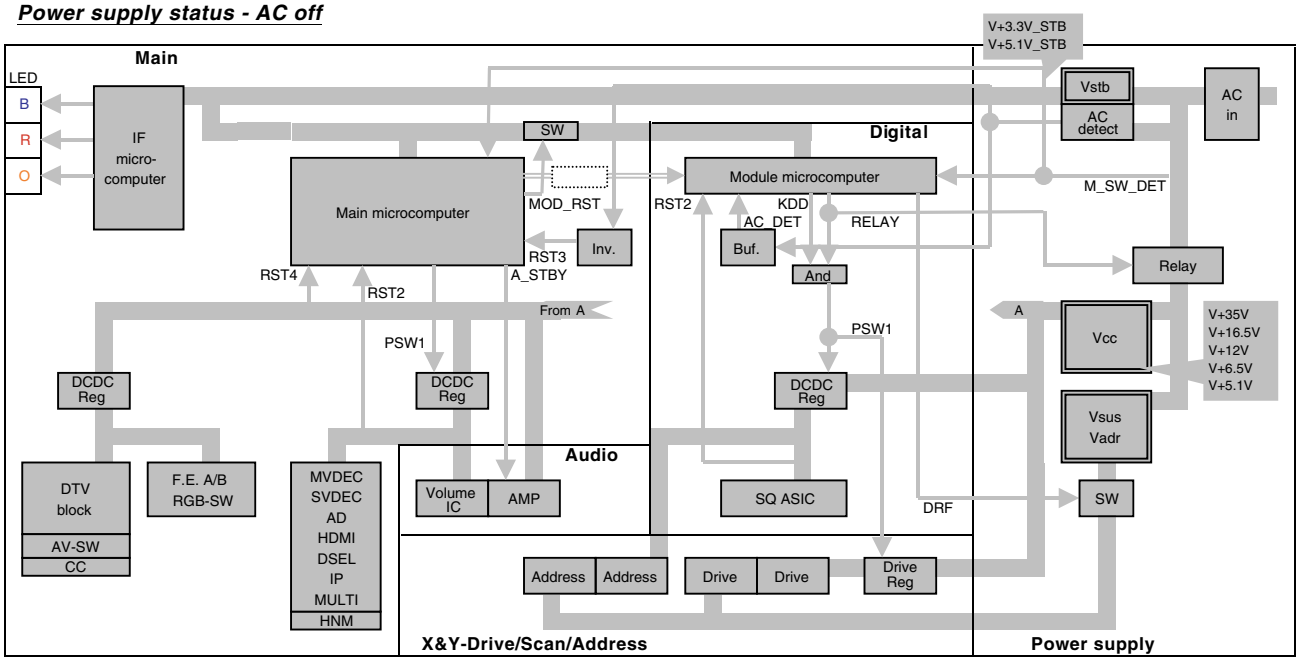


Power supply status - POWER button off



This state of the power supply is the same as the Standby mode.
However, all LED is turned off, and the operation by the user is not effective.

Power supply status - AC off



10.3 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM

Function: It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (large signal system) in order to avoid a power down.

Application:

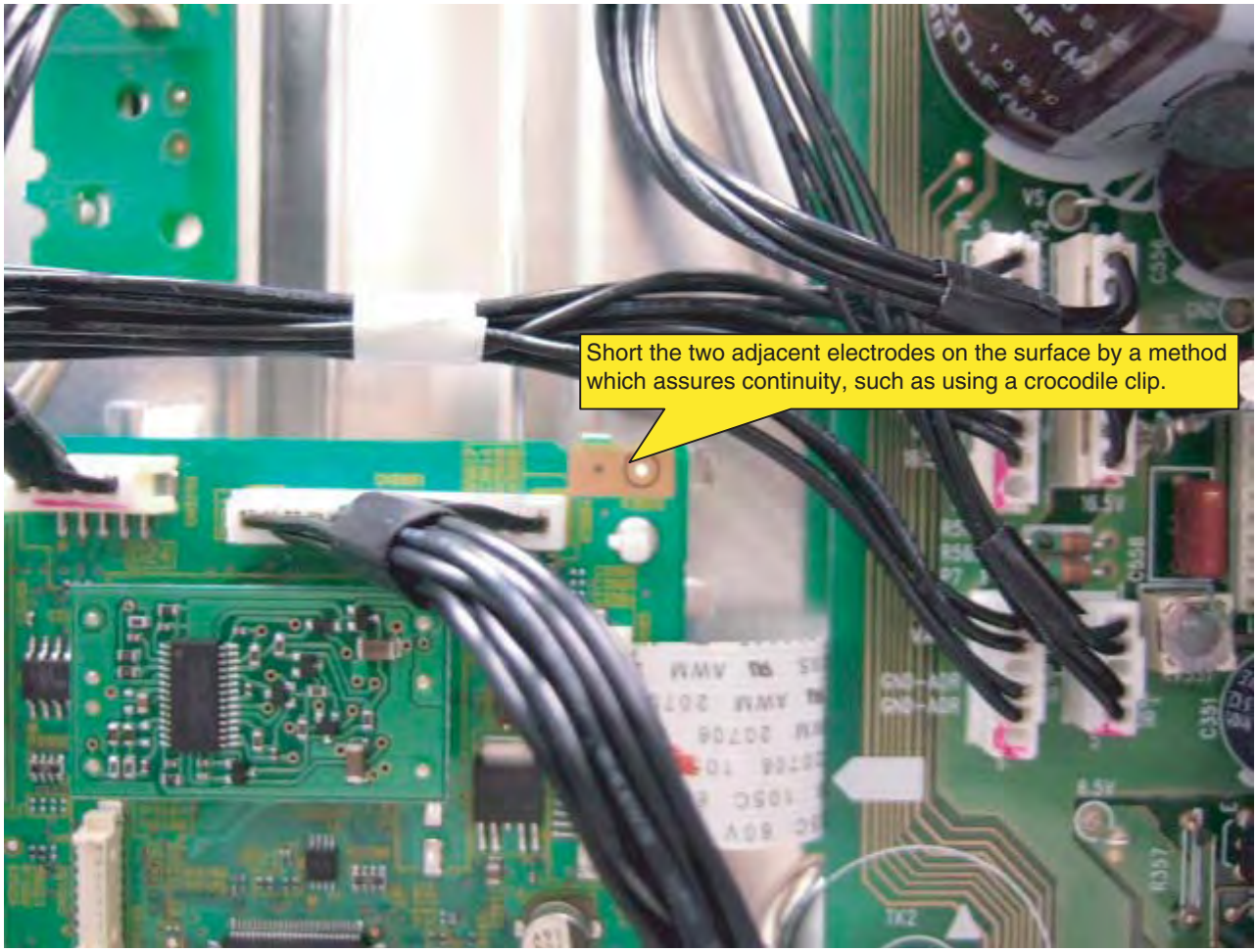
1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the large signal system power supply or with the small signal system power supply.

Method:

1. Make shorting between the specified location (refer to the illustration below) of the PCB surface of the DIGITAL ASSY and the nearby pattern.
2. Execute [DRV S00] by RS232C command. ([DRV S01] for release)

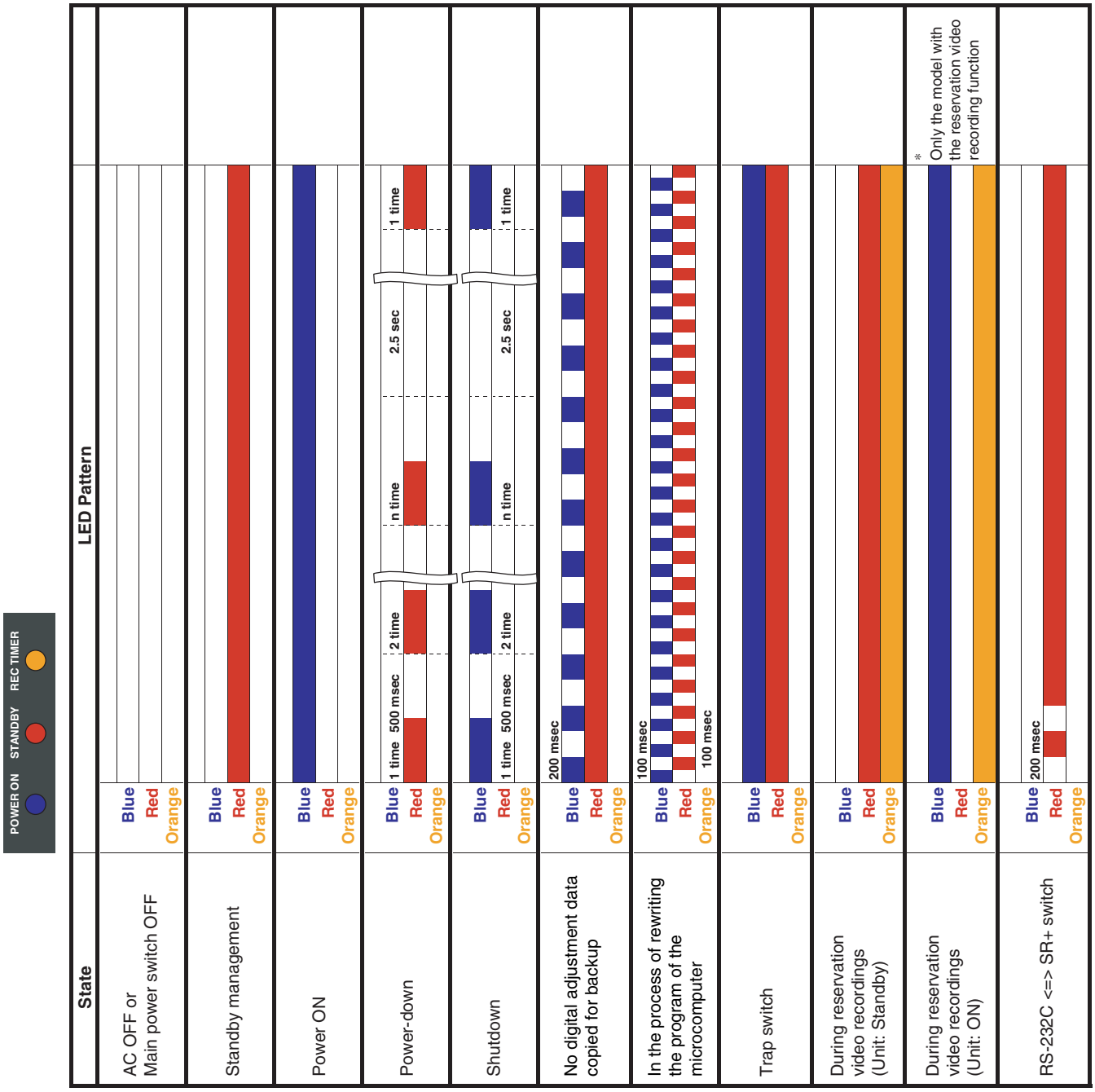
Supplemental explanation:

- When the large signal system power supply is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the large signal system power supply, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS232C command control, [DRVS01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- Command [DRVS00/S01] is effective even during standby. When the main power is turned OFF, however, [DRVS01] (release) will be effective.



10.4 LED INFORMATION

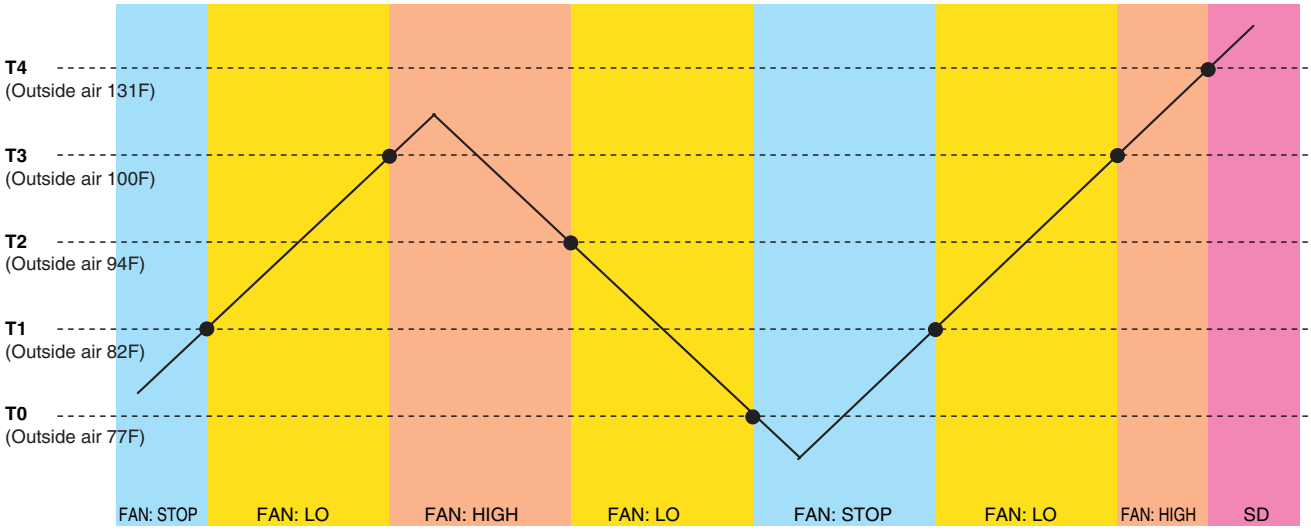
LED Pattern



10.5 SPECIFICATION ABOUT THE THERMAL PROTECTION

* The change of HI / LO have hysterisis curve below.

Reading Value of The Sensor and FAN Drive.



Assign			AD Value 10bit	AD Value 8bit	Sensor Temp.	Aims (Outside Air)	
Pin 76	TEMP2	T4 setting	424	106	268F	131F	SD
		T3 setting	566	142	104F	100F	Low → High
		T2 setting	601	150	97F	94F	High → Low
		T1 setting	653	163	86F	82F	STOP → Low
		T0 setting	679	170	80F	77F	Low → STOP

Operation when executing FAN control command

When executing [FCNS00], [FCNS01], [FCNS02] command, detect the FAN_NG signal. When NG is detected, it becomes shutdown. When [FCNS03] command is executed, FAN_NG detection is not operated.

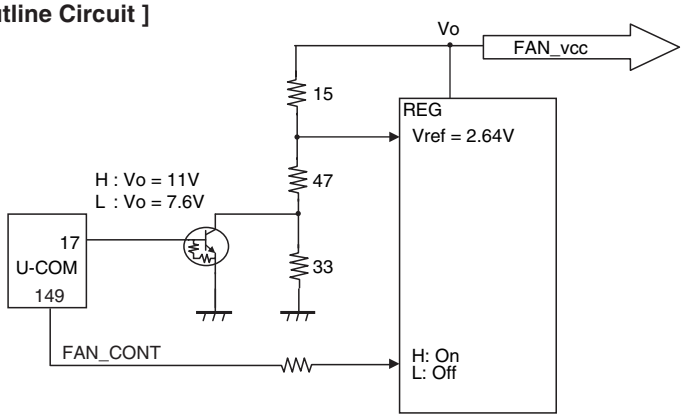
Assign	FAN: HIGH	FAN: LO	OFF
Pin 149 (FAN_CONT)	H	H	L
Pin 17 (FAN_CONT_POW)	H	L	–

This model control the FAN drive by pin 149 (FAN ON / OFF) and pin 17 (Change of FAN control voltage) of MAIN U-com.

Set State and FAN Drive

Power	PSW1	State	Control	Fan Operation
ON OFF	ON	ON STB	According to the reading value of above table sensor. FAN_CONT: "L"	HIGH or LO OFF

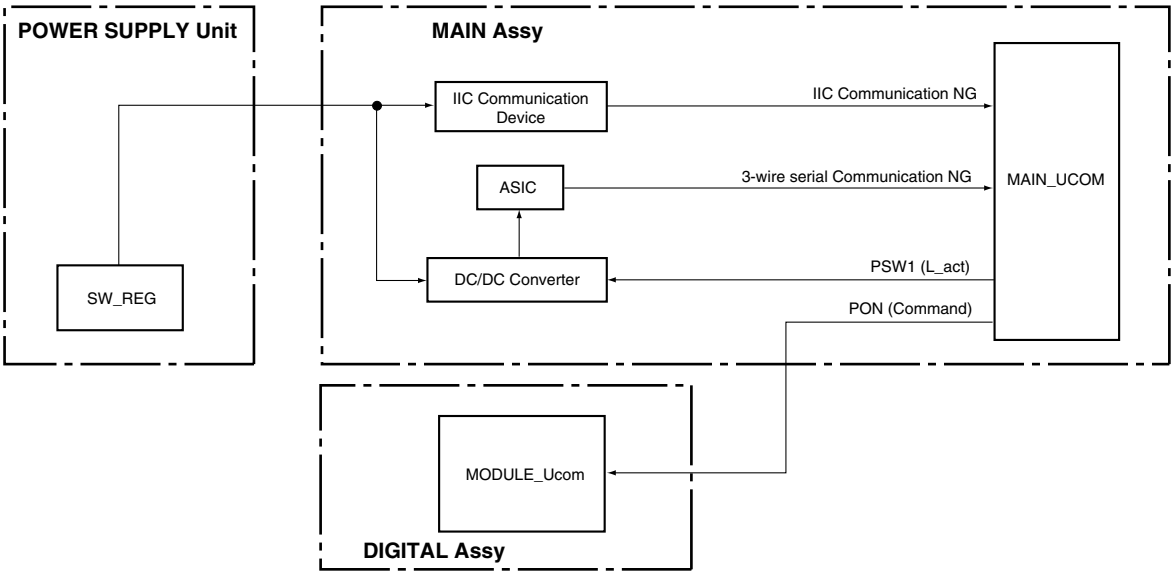
[Outline Circuit]



10.6 PROCESSING IN ABNORMALITY

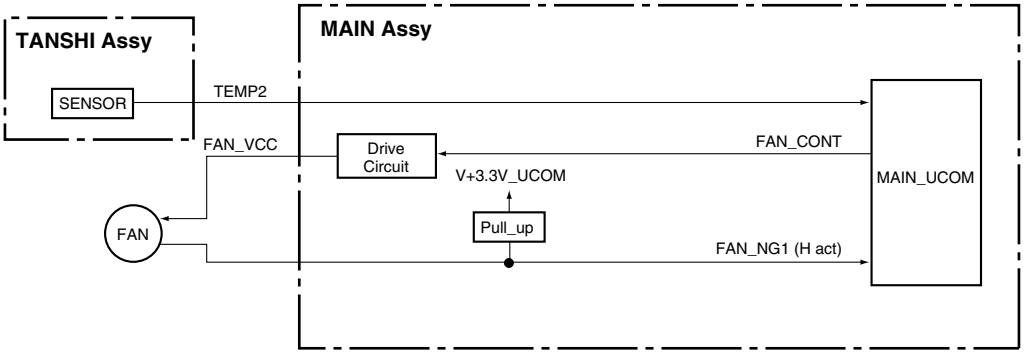
Power supply and DC-DC converter

● **Circuit diagram**



Fan and temperature sensor

● **Circuit diagram**

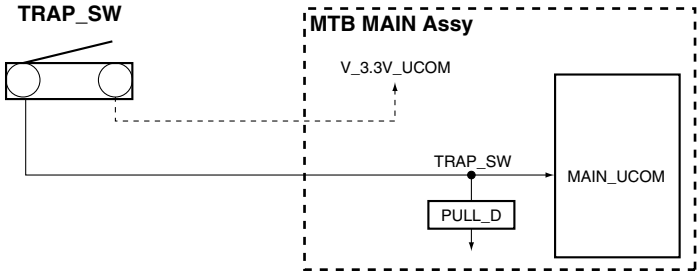


● **Specifications for port monitoring**

Port Name	SD/PD Indication	Assigned Pin	Active
FAN_NG 1	FAN	155	Shutdown with H
TEMP2	Abnormally high temperature in the MR	76	Shutdown when the value exceeds the predetermined value

TRAP_SW

● **Circuit diagram**

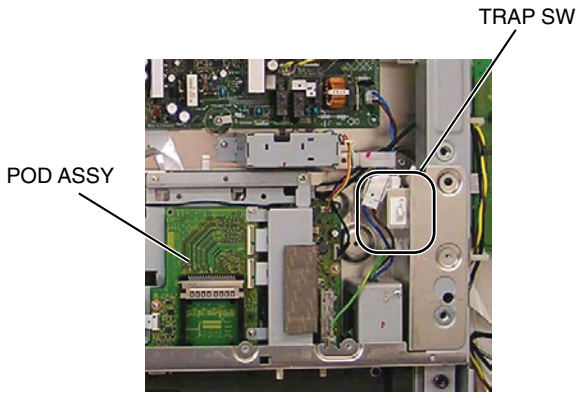


10.7 TRAP SW

● Outline and Notes

For video data transmission inside this Plasma Display, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again "if the upper plate of the unit is accidentally opened," in order to prevent the panel technology from being leaked out.

The TRAP switch is disabled while the unit is turned off.
When performing internal diagnosis of the PDP, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.



WHEN THE TRAP SW WORKS

Just in case the TRAP SW works, the red and green LEDs may be lighting. After closing the bonnet or dealing with the TRAP SW on ahead, carry out following procedure from this state.

■ **Cancelling by the remote control**

- Enter to the Factory mode.
- Then, proceed to INITIALIZE layer inside the Factory mode, and then press "DISPLAY" key for more than 5 seconds.

11. SPECIFICATION

11.1 SPECIFICATION

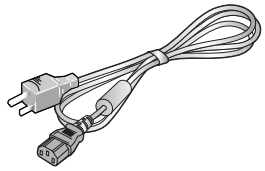
Item			42" Plasma Display Model: PDP-4272HD/ PDP-4271HD/PDP-4270HD
Number of pixels			1024 x 768 pixels
Audio Amplifier			13 W + 13 W (1 kHz, 10 %, 8 Ω)
Speakers			Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type
Surround System			SRS/FOCUS/TruBass
Power Requirement			120 V AC, 60 Hz, 308 W (26 W Standby)
Weight			Main unit: 29 kg (64 lbs.) Stand: 2.5 kg (5.5 lbs.) (including bolts) Total: 31.5 kg (69.5 lbs.)
Reception System (Digital)			ATSC Digital TV system
	Circuit type		8VSB/64QAM/256QAM/QPSK demodulation
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	Ch. 2 to 135
	Audio format		Dolby Digital
Reception System (Analog)			American TV standard NTSC system
	Circuit type		Video signal detection PLL full synchronous detection, PLL digital Synthesizer system
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	ANT/CABLE A IN Ch. 1 to 135 ANT B IN Ch. 1 to 125
	Audio multiplex		BTSC system
Terminals Rear		ANT/CABLE A IN	75 Ω UNBAL, F Type for DTV/VHF/UHF/CATV in
		ANT B IN	75 Ω UNBAL, F Type for VHF/UHF/CATV in Loop out
		INPUT 1	S-VIDEO in, VIDEO in, AUDIO in
		INPUT 2	COMPONENT VIDEO in, S-VIDEO in, VIDEO in, AUDIO in
		INPUT 3	COMPONENT VIDEO in, AUDIO in
		PC	Analog RGB in, AUDIO in
		INPUT 5	HDMI in*, AUDIO in
		INPUT 6	HDMI in*, AUDIO in
		MONITOR OUT	VIDEO out, AUDIO out
		Digital Audio Output	Optical
		G-LINK	1
		CONTROL OUT	1
		SUB WOOFER OUTPUT	Variable
		Cable CARD	Point of Deployment
	Side	INPUT 4	COMPONENT VIDEO in, VIDEO in, AUDIO in
		USB	USB in**
On-screen display languages			English/French/Spanish

* This conforms to HDMI1.1 and HDCP1.1.
HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable.
HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

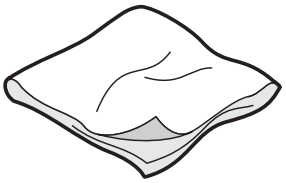
** This conforms to USB 1.1 and 2.0 .

• Design and specifications are subject to change without notice.

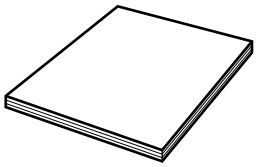
11.2 ACCESSORY



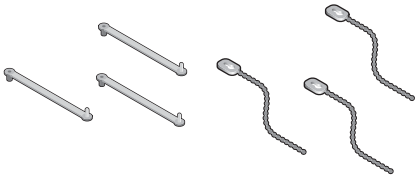
Power cord (2 m/6.6 feet)
(ADG1215)



Cleaning cloth
(AED1285)

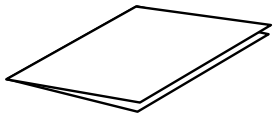


Operating instructions
(ARE1426)

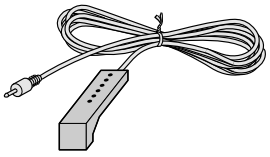


Speed clamp · 3 Bead band · 3

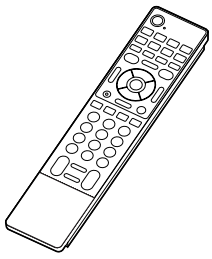
Binder Assy (AEC1908)



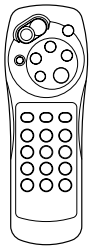
Warranty card



G-LINK cable (3 m/9.8 feet)
(VDX1010)

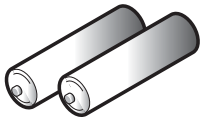


Remote control unit
(AXD1536)

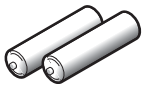


Simplified remote control unit*
(for PDP-4271HD only)
(AXD1539)

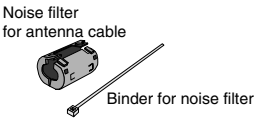
Hexagonal wrench x 1
(Diagonal size: 6 mm)
(AEF1029)



AA size battery x 2
(Alkaline battery for
remote control unit)



AAA size battery x 2
(Manganese battery for simplified
remote control unit)
(for PDP-4271HD only)

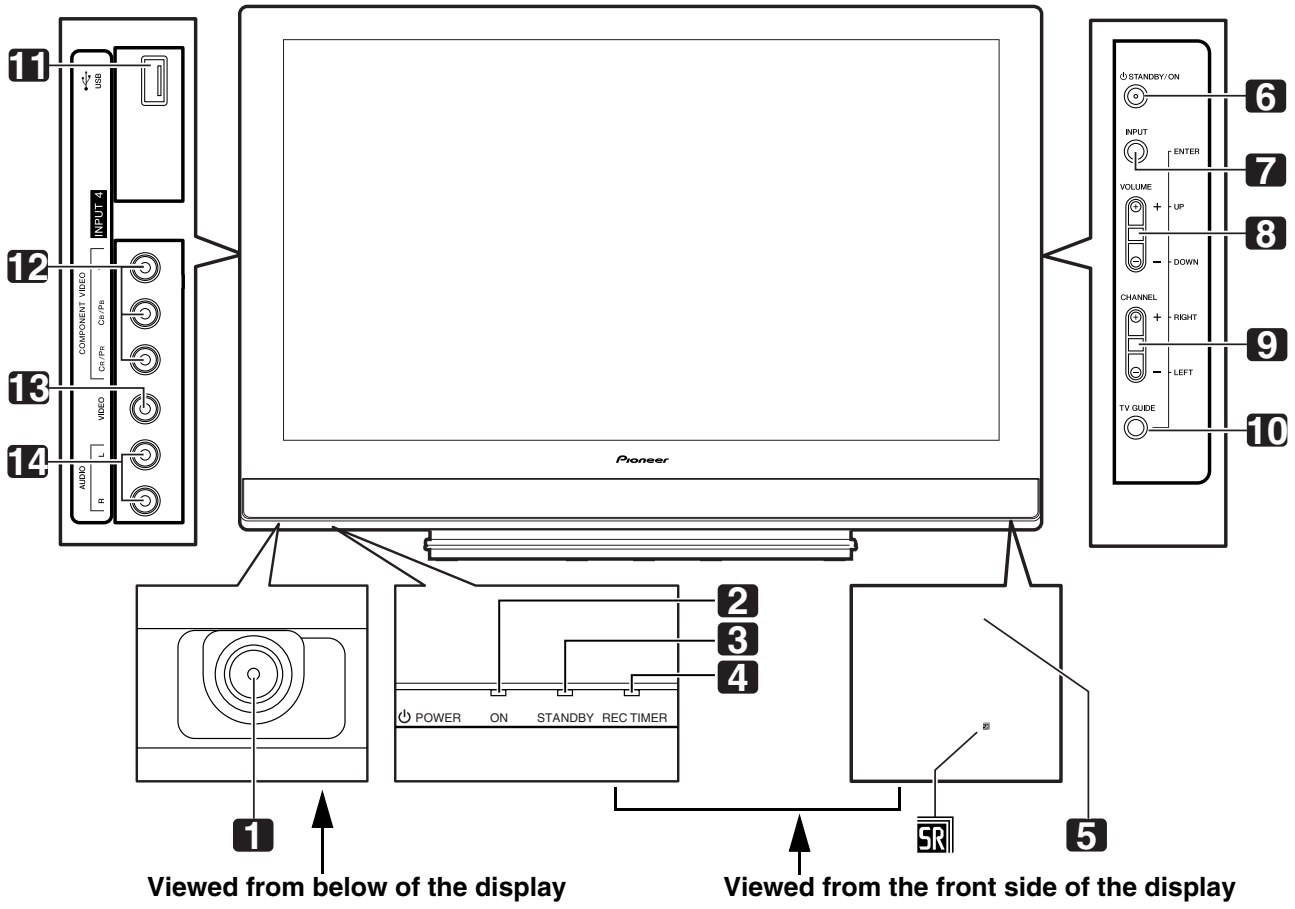


Filter (CTX1054)

* Buttons used for only basic operations are provided on the simplified remote control unit. You can use it as necessary.

11.3 PANEL FACILITIES

Front/side view
(PDP-4272HD/PDP-4271HD/PDP-4270HD)



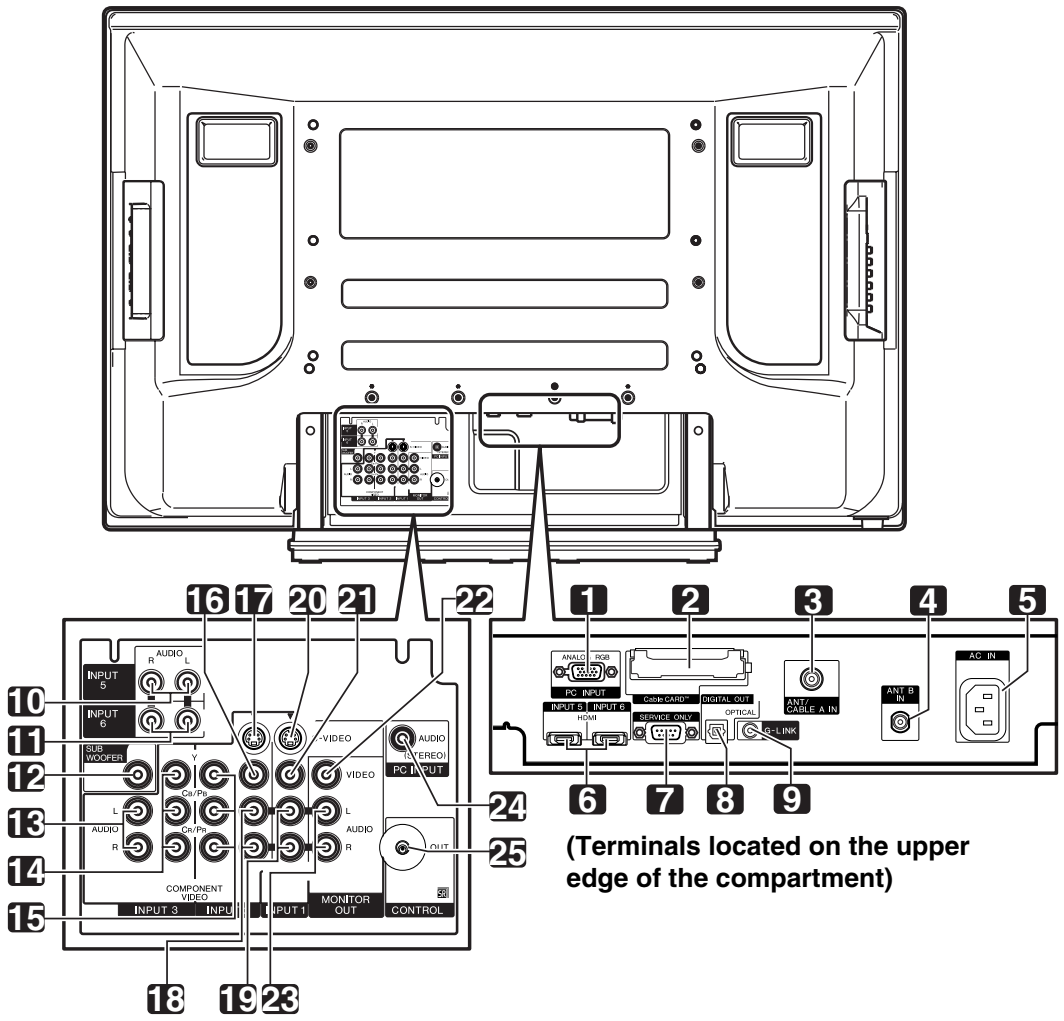
1 ⏻ **POWER** button
2 POWER ON indicator
3 STANDBY indicator
4 REC TIMER indicator
5 Remote control sensor

(Side view)

6 **STANDBY/ON** button
7 **INPUT** button (**ENTER** button*)
8 **VOLUME UP/DOWN** buttons (**UP/DOWN** buttons*)
9 **CHANNEL UP/DOWN** buttons (**LEFT/RIGHT** buttons*)
10 **TV GUIDE** button*
11 USB port
12 INPUT 4 terminals (COMPONENT VIDEO: Y, CB/PB, CR/PR)
13 INPUT 4 terminal (VIDEO)
14 INPUT 4 terminals (AUDIO)

The buttons with asterisks (*) can operate the TV Guide On Screen™ system.

Rear view
(PDP-4272HD/PDP-4271HD/PDP-4270HD)

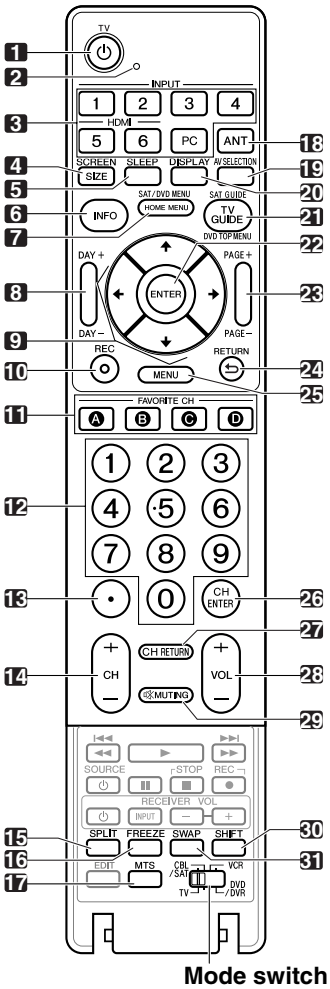


(Terminals located on the upper edge of the compartment)

1 PC INPUT terminal (ANALOG RGB)
2 CableCARD™ slot
3 ANT/CABLE A IN terminal
4 ANT B IN terminal
5 AC IN terminal
6 HDMI terminals (INPUT 5/INPUT 6)
7 RS-232C terminal
(used for factory setup)
8 DIGITAL OUT terminal (OPTICAL)
9 G-LINK terminal
10 INPUT 5 terminals (AUDIO)
11 INPUT 6 terminals (AUDIO)
12 SUB WOOFER terminal
13 INPUT 3 terminals (AUDIO)
14 INPUT 3 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)
15 INPUT 2 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)
16 INPUT 2 terminal (VIDEO)
17 INPUT 2 terminal (S-VIDEO)
18 INPUT 2 terminals (AUDIO)
19 INPUT 1 terminals (AUDIO)
20 INPUT 1 terminal (S-VIDEO)
21 INPUT 1 terminal (VIDEO)
22 MONITOR OUT terminal (VIDEO)
23 MONITOR OUT terminals (AUDIO)
24 PC INPUT terminal (AUDIO)
25 CONTROL OUT terminal

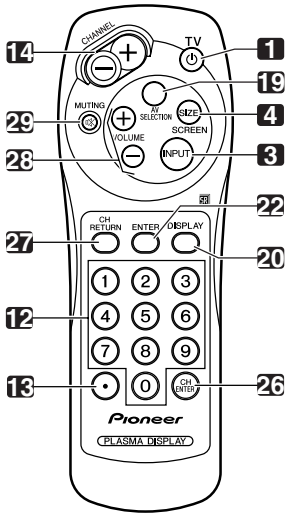
Remote control unit

This section describes the functions of the buttons available when the mode switch has been set to TV. For the buttons for controlling other equipment, see "Using the remote control unit to control other devices" starting .



Mode switch (with "TV" selected)

Simplified remote control unit (PDP-5071HD/PDP-4271HD only)



1 **TV ⏻** : Turns on the power to the Plasma Display System or places it into standby mode.
2 Transmission confirmation LED
3 **INPUT**: Selects an input source of the Plasma Display System. (INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC) (With the simplified remote control unit, **INPUT** toggles between ANT-A, ANT-B, INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC.)
4 **SCREEN SIZE**: Selects the screen size.
5 **SLEEP**: Sets the sleep timer.
6 **INFO**: Displays a channel banner when a TV program is being watched.
When the TV Guide On Screen™ system is in operation, displays information about the currently highlighted channel (if available).
7 **HOME MENU**: Displays the Home Menu screen.
8 **DAY +/-**: Jumps to the next or previous day of program listings in the TV Guide On Screen™ Listing service.
9 ↑/↓/←/→: Selects a desired item on the menu screen.
10 **REC**: When using the TV Guide On Screen™ System, starts recording with a connected VCR.
11 **FAVORITE CH (A, B, C, D):**
Selects any of the four preset channels. for details to set the FAVORITE CH.
While watching, you can toggle the set channels by pressing **A**, **B**, **C** and **D**.
12 **0 - 9**: Selects the channel.
13 **•(dot)**: Enters a dot.
14 **CH +/-**: Selects the channel.
15 **SPLIT**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
16 **FREEZE**: Freezes a frame from a moving image. Press again to cancel the function.
17 **MTS**: Selects MTS/SAP or language depending on the program being watched.
18 **ANT**: Selects the antenna (A, B). for details.
19 **AV SELECTION**: Selects audio and video settings. (AV mode: STANDARD, DYNAMIC, MOVIE, GAME, USER. PC mode: STANDARD, USER.)
20 **DISPLAY**: Displays the channel information.
21 **TV GUIDE**: Displays the TV Guide On Screen™ system.
22 **ENTER**: Executes a command.
23 **PAGE +/-** (for the TV Guide On Screen™ system): Scrolls the program listing screen vertically.
24 **RETURN**: Returns to the previous menu screen.
25 **MENU**: Displays a panel menu in the TV Guide On Screen™ system.
26 **CH ENTER**: Executes a channel number.
27 **CH RETURN**:Returns to the previous channel. This button is disabled while the TV Guide On Screen™ system is displayed.
28 **VOL +/-**: Sets the volume.
29 **MUTING**: Mutes the sound.
30 **SHIFT**: Moves the location of the small screen when in the picture-in-picture mode.
31 **SWAP**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

Luminous remote control buttons (main unit only)
All buttons on the main remote control unit are luminous and gather and store light. This enables quick access to the desired function when performing operations in dark places.

NOTE

- When using the remote control unit, point it at the Plasma Display.
- for operating buttons not listed on this page.

12. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

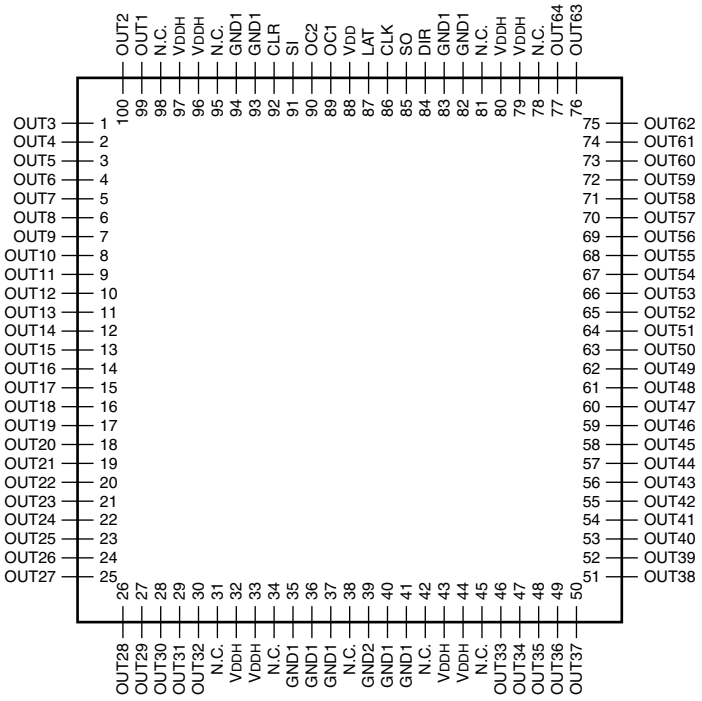
● **List of IC**

SN755870KPZT, PEE002B-K, BCM7038KPB1G-B2, R5520H001B, R2S11002AFT, R2S11001FT, UPD64015AGM-UEM, AD9985KSTZ-110, SII9023CTU

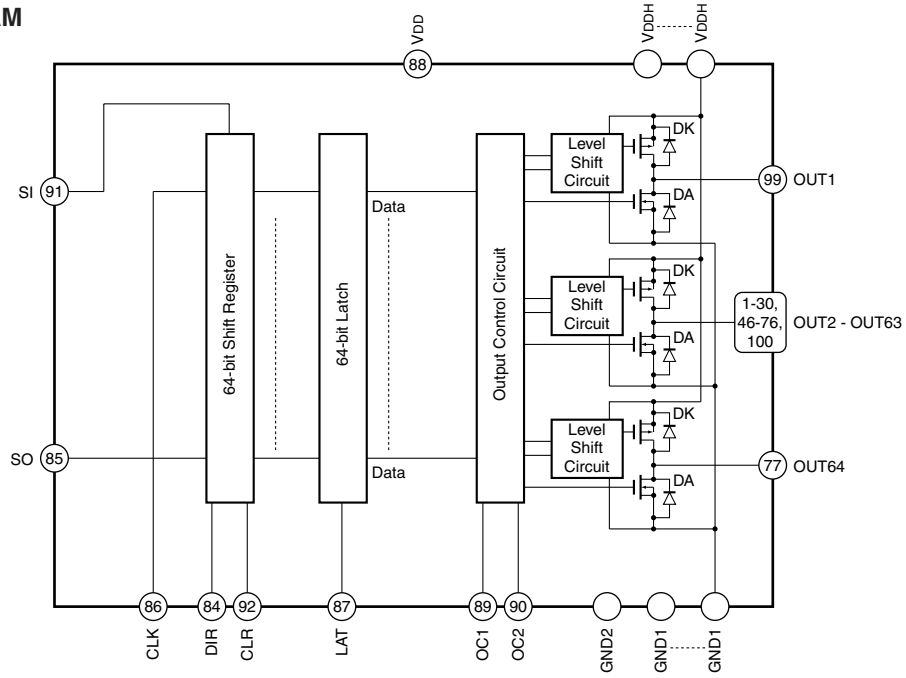
■ SN755870KPZT (42 SCAN A ASSY : IC2801 - IC2806) (42 SCAN B ASSY : IC2901 - IC2906)

• PLASMA DISPLAY PANEL IC

● PIN LAYOUT (Top View)



● BLOCK DIAGRAM



● **PIN FUNNCTION**

No.	Pin Name	I/O	Pin Function
1 - 30	OUT3 - OUT32	O	High-voltage push-pull output
31	N.C.	–	Not used
32 - 33	V_{DDH}	–	Power for High-voltage circuit
34	N.C.	–	Not used
35 - 37	GND1	–	GND
38	N.C.	–	Not used
39	GND2	–	GND
40 - 41	GND1	–	GND
42	N.C.	–	Not used
43 - 44	V_{DDH}	–	Power for High-voltage circuit
45	N.C.	–	Not used
46 - 77	OUT33 - OUT64	O	High-voltage push-pull output
78	N.C.	–	Not used
79 - 80	V_{DDH}	–	Power for High-voltage circuit
81	N.C.	–	Not used
82 - 83	GND1	–	GND
84	DIR	I	Setting the shift direction of shift-register L : reverse side shift (SO→SI), H : forward side shift (SI→SO)
85	SO	I/O	Serial data In/Out
86	CLK	I	Serial clock Input Down-side edge trigger
87	LAT	I	LAT data Input L : The data of shiftregister is transferred to ouput latch. H : The ouput data of latch is holded.
88	V_{DD}	–	Power for Logic circuit
89	OC1	I	Output control Output is controlled by truth table right side.
90	OC2	I	
91	SI	I/O	Serial data In/Out
92	CLR	I	All output reset CLR terminal : L → normal operation, CLR terminal : H→ All output "H"
93 - 94	GND1	–	GND
95	N.C.	–	Not used
96 - 97	V_{DDH}	–	Power for High-voltage circuit
98	N.C.	–	Not used
99 - 100	OUT1 - OUT2	O	High-voltage push-pull output

OC1	OC2	OUT
L	L	ALL Hi-Z
L	H	DATA
H	L	ALL L
H	H	ALL H

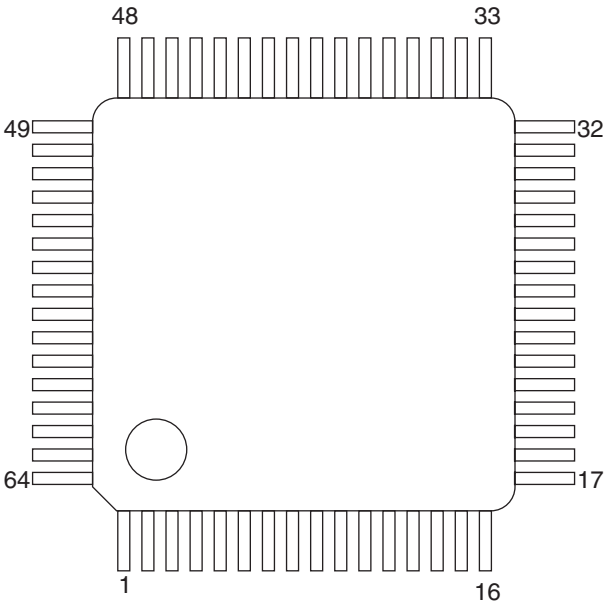
PEE002B-K (42 ADDRESS ASSY:IC1501)

• LVDS Receiver

● PIN FUNCTION

PIN no.	I/O TYPE	SIGNAL
1	LRGND	
2	bb_silcdhsip_7c19a	RAMP1
3	bb_silcdhsip_7c19a	RAPP1
4	bb_silcdhsip_7c19a	RBMP1
5	bb_silcdhsip_7c19a	RBPP1
6	LRVDD	
7	bb_silcdhsip_7c19a	RCMP1
8	bb_silcdhsip_7c19a	RCPP1
9	bb_silcdhsip_7c19a	RCLKMP1
10	bb_silcdhsip_7c19a	RCLKPP1
11	bb_silcdhsip_7c19a	RDMP1
12	bb_silcdhsip_7c19a	RDPP1
13	LRGND	
14	LPGND	
15	LPVDD	
16	SIBTD	TEST0
17	SIBTD	TEST1
18	SIBTD	PHSSEL1
19	SIBTD	PHSSEL0
20	SIBTD	DIV0
21	SIBTD	DIV1
22	GND	
23	VDD	
24	VDD	
25	SOT4L	R_E
26	SOT4L	G_E
27	SOT4L	B_E
28	GND	
29	SOT4L	ADRSV3
30	SOT4L	R_D
31	SOT4L	G_D
32	SOT4L	B_D
33	VDD	
34	SOT8FL	LE
35	GND	
36	SOT12FL	CLKOUT
37	VDD	
38	SOT4L	ADR_B
39	SOT4L	ADR_D
40	SOT4L	ADR_U

PIN no.	I/O TYPE	SIGNAL
41	SOT4L	ADR_G
42	SOT4L	LBLK
43	SOT4L	HBLK
44	GND	
45	SOT4L	HZ
46	SOT4L	R_C
47	SOT4L	G_C
48	SOT4L	B_C
49	VDD	
50	SOT4L	ADRSV2
51	SOT4L	R_B
52	GND	
53	SOT4L	G_B
54	SOT4L	B_B
55	GND	
56	VDD	
57	SOT4L	ADRSV1
58	VDD	
59	SOT4L	R_A
60	SOT4L	G_A
61	GND	
62	SOT4L	B_A
63	SOT4L	ADRSV0
64	SISTD	OE

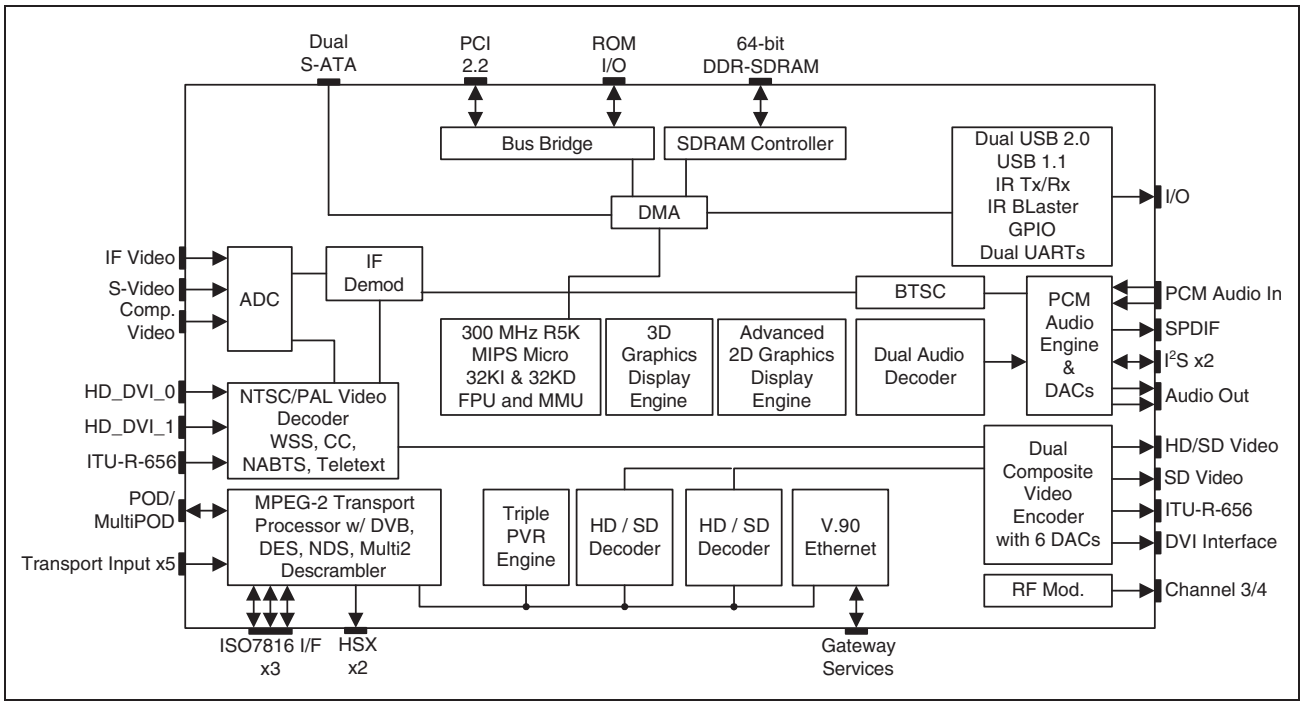


■ BCM7038KPB1G-B2 (MAIN ASSY : IC6301)

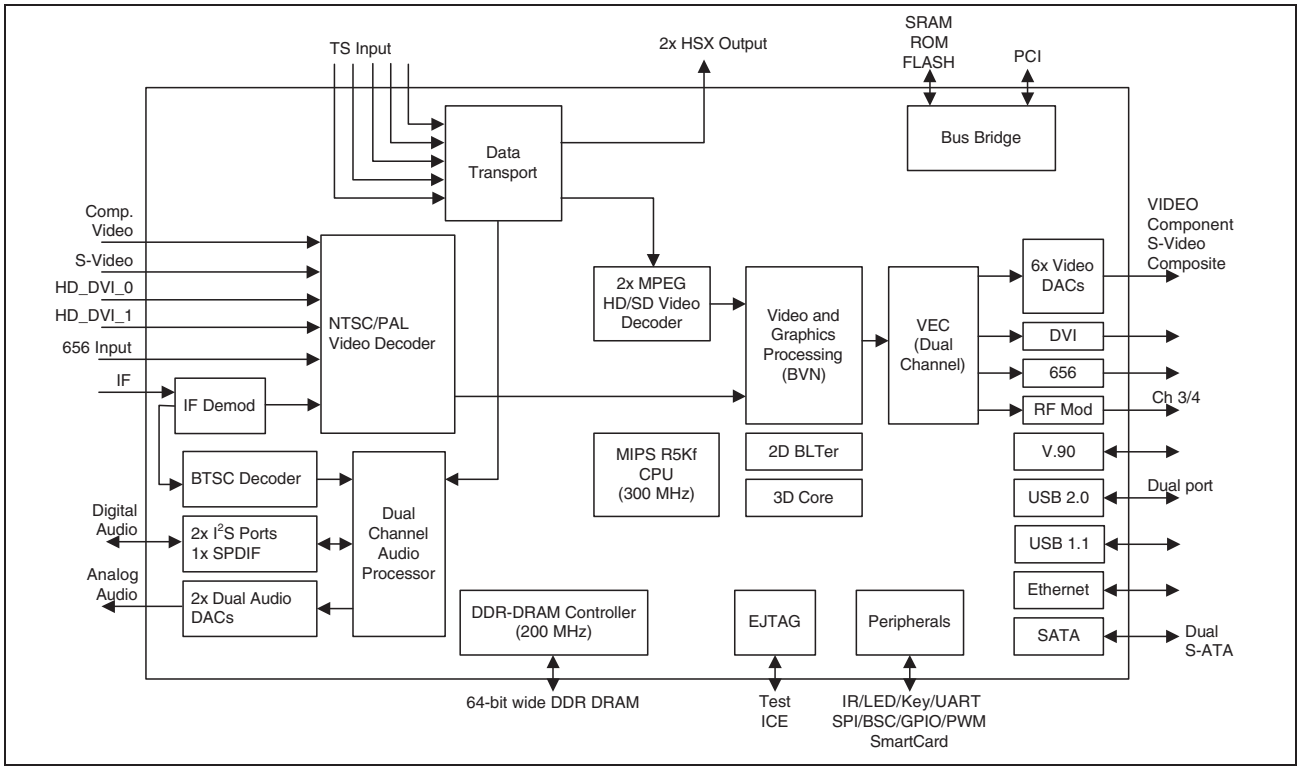
• System IC

● BLOCK DIAGRAM

[System Block Diagram]



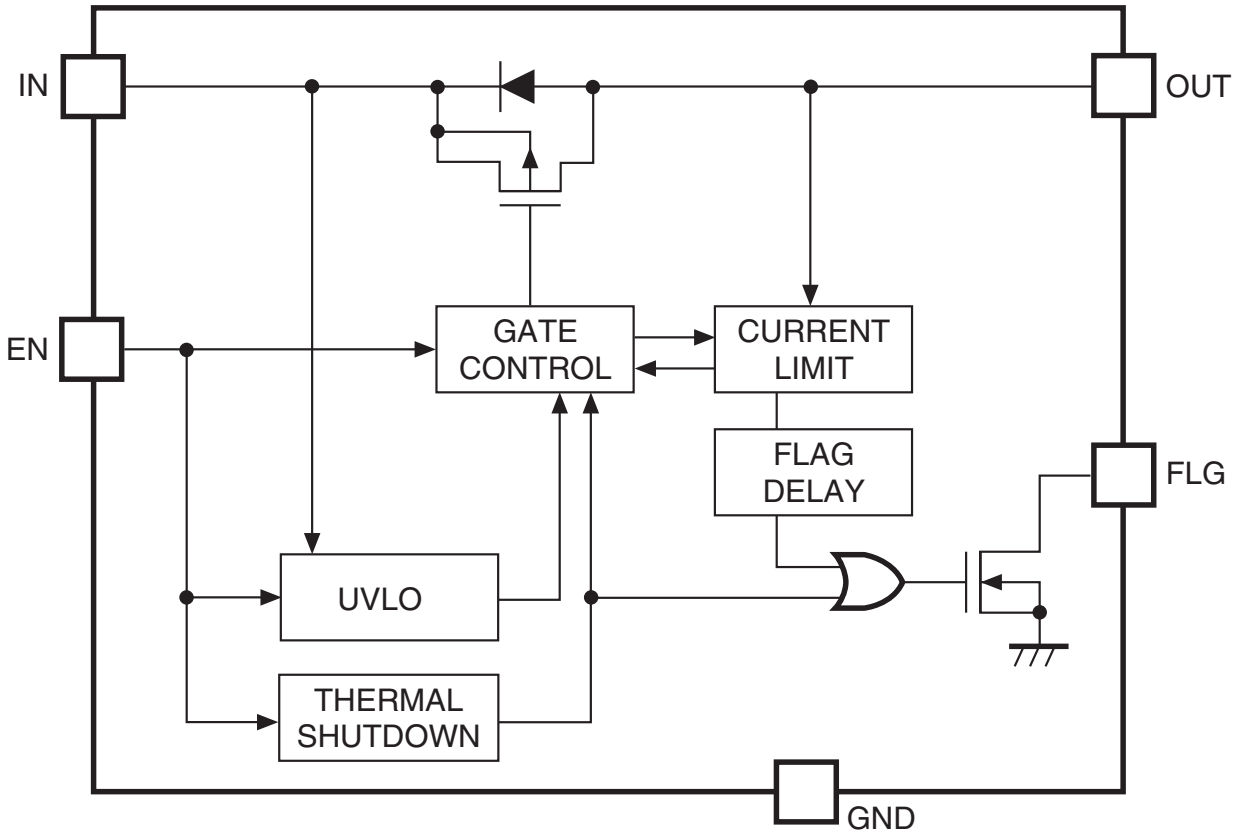
[Functional Block Diagram]



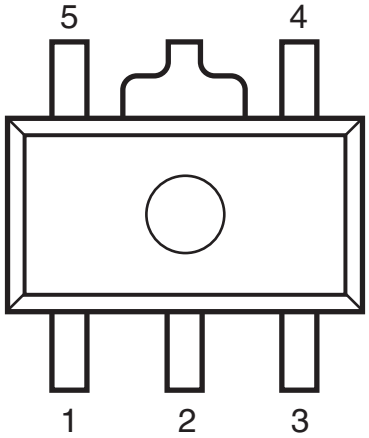
■ R5520H001B (MAIN ASSY : IC7105)

• USB HIGH-SIDE SW IC

● BLOCK DIAGRAM



● PIN LAYOUT



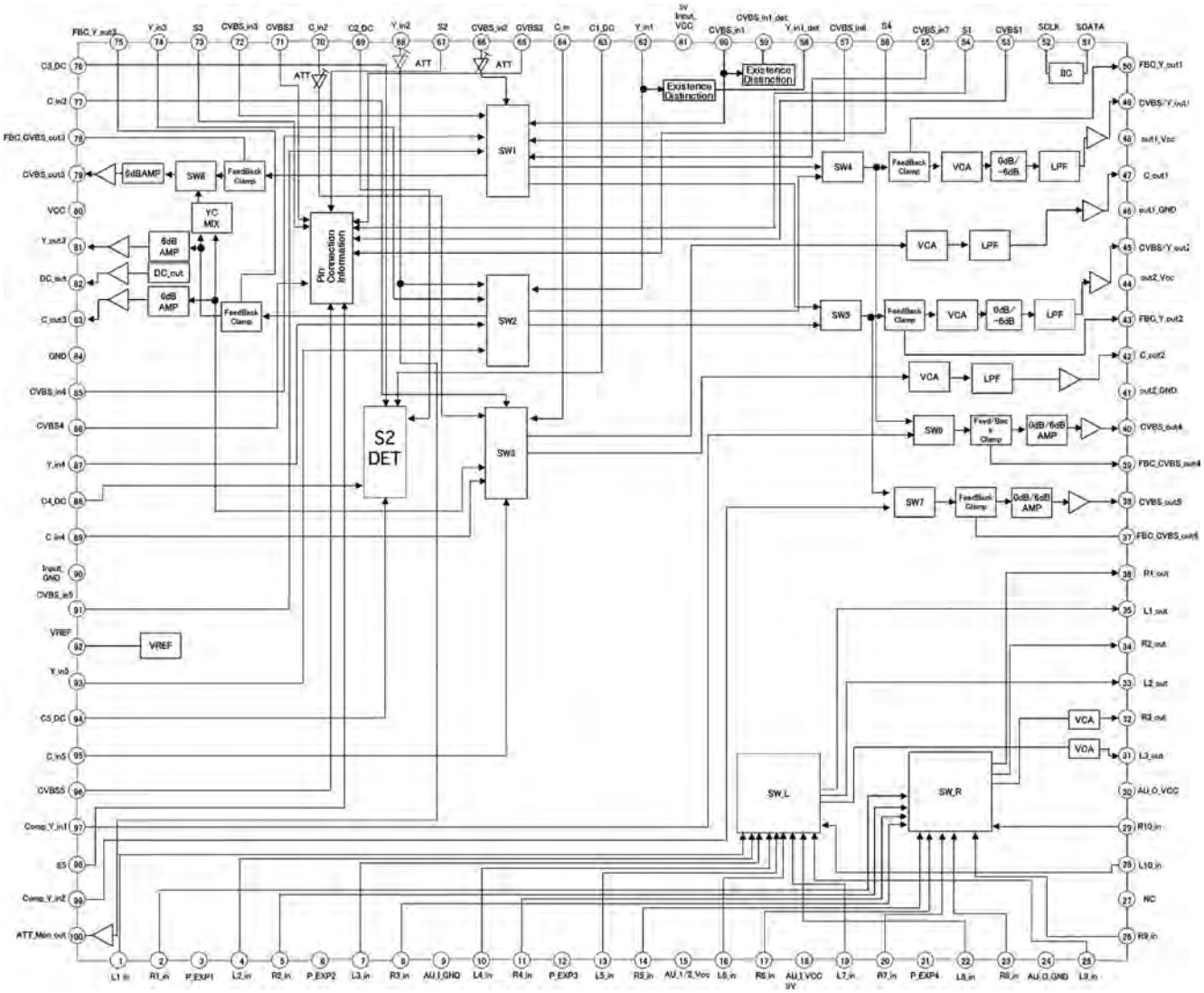
● PIN FUNCTION

Pin No.	Name	Function
1	EN	Enable terminal
2	GND	GND terminal
3	FLG	FLAG terminal (Open-drain output)
4	IN	Power input terminal
5	OUT	Output terminal

■ R2S11002AFT (MAIN ASSY: IC4701)

• AV SW

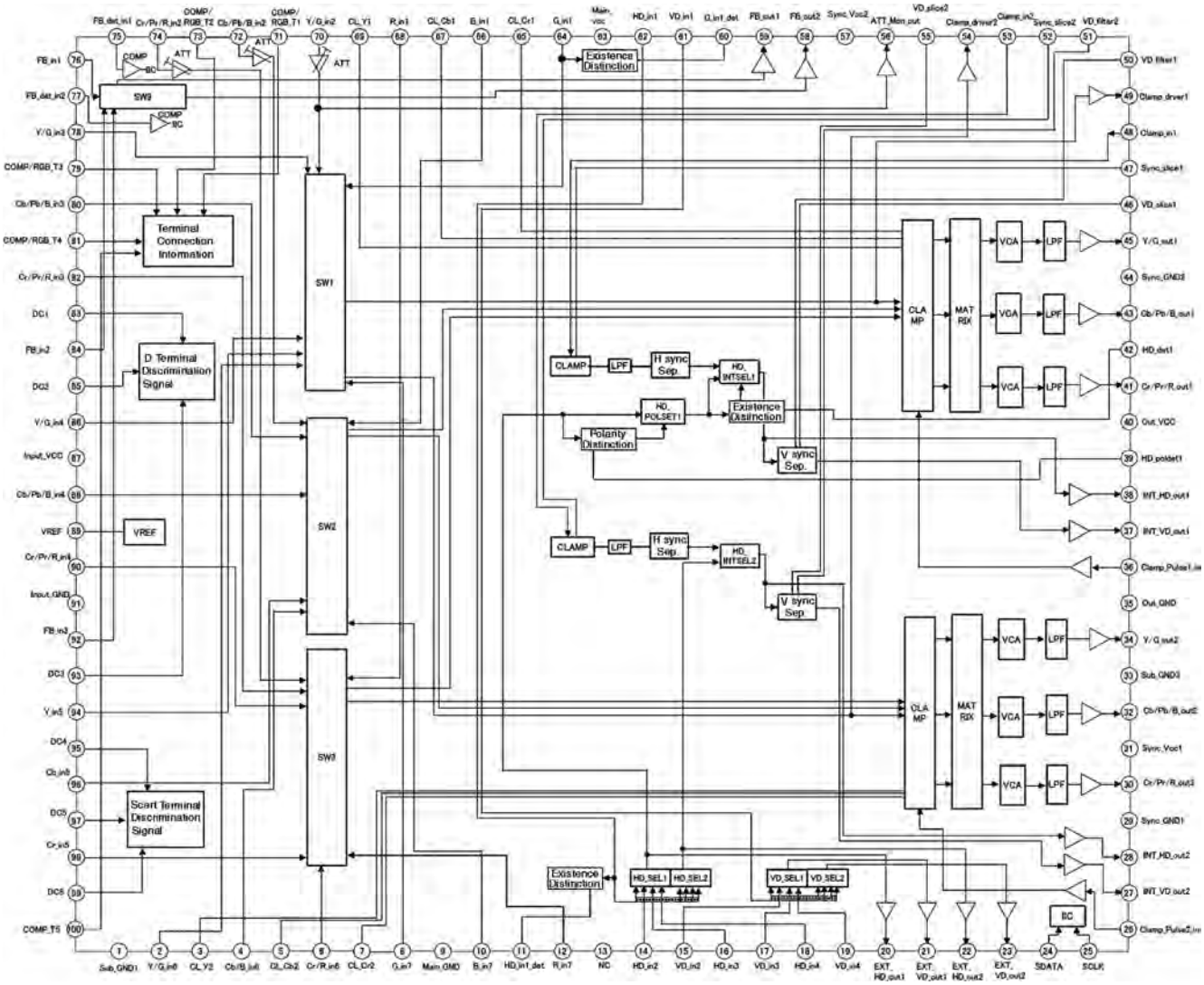
● Block Diagram



■ R2S11001FT (MAIN ASSY: IC4901)

• Component SW IC

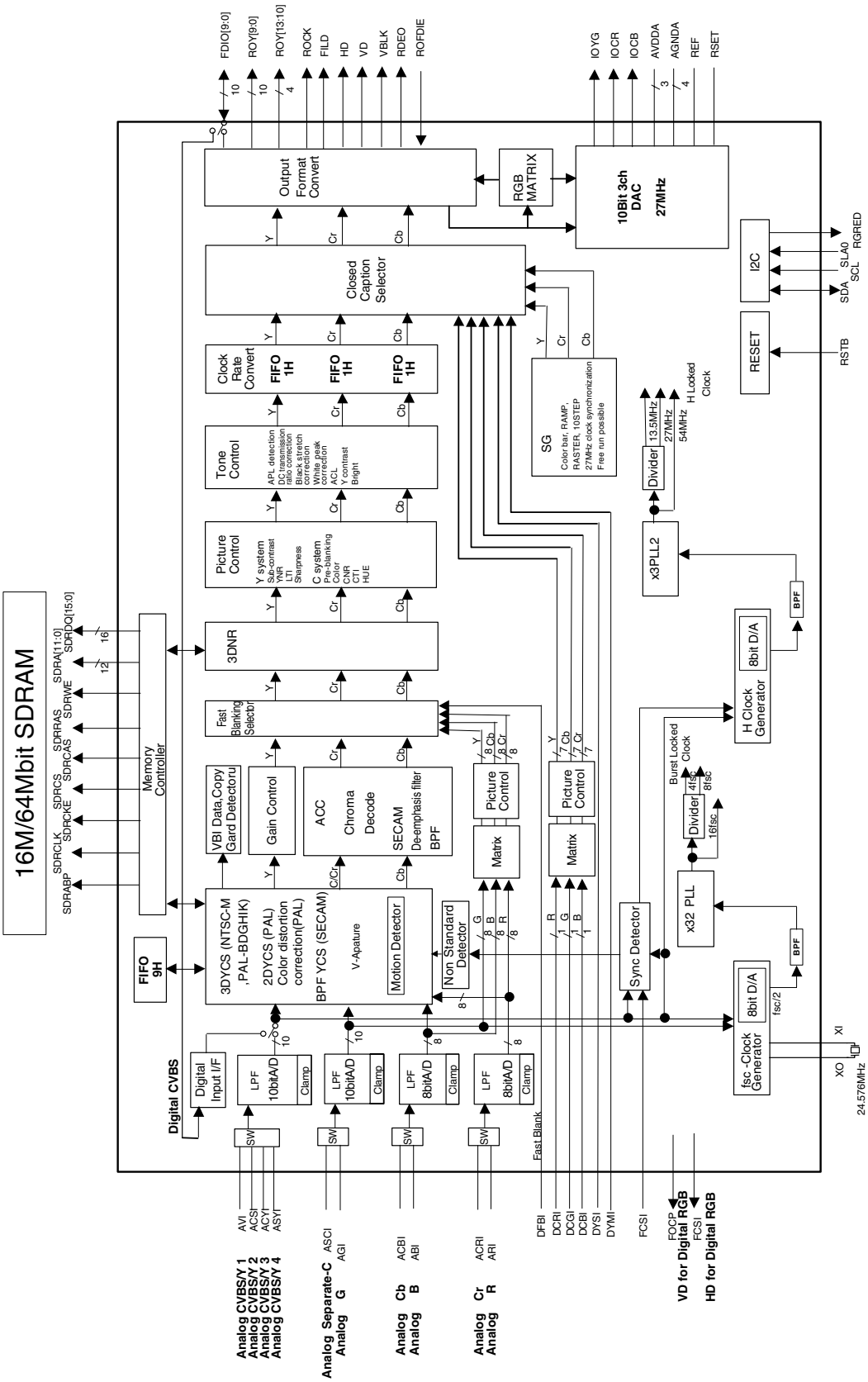
● Block Diagram



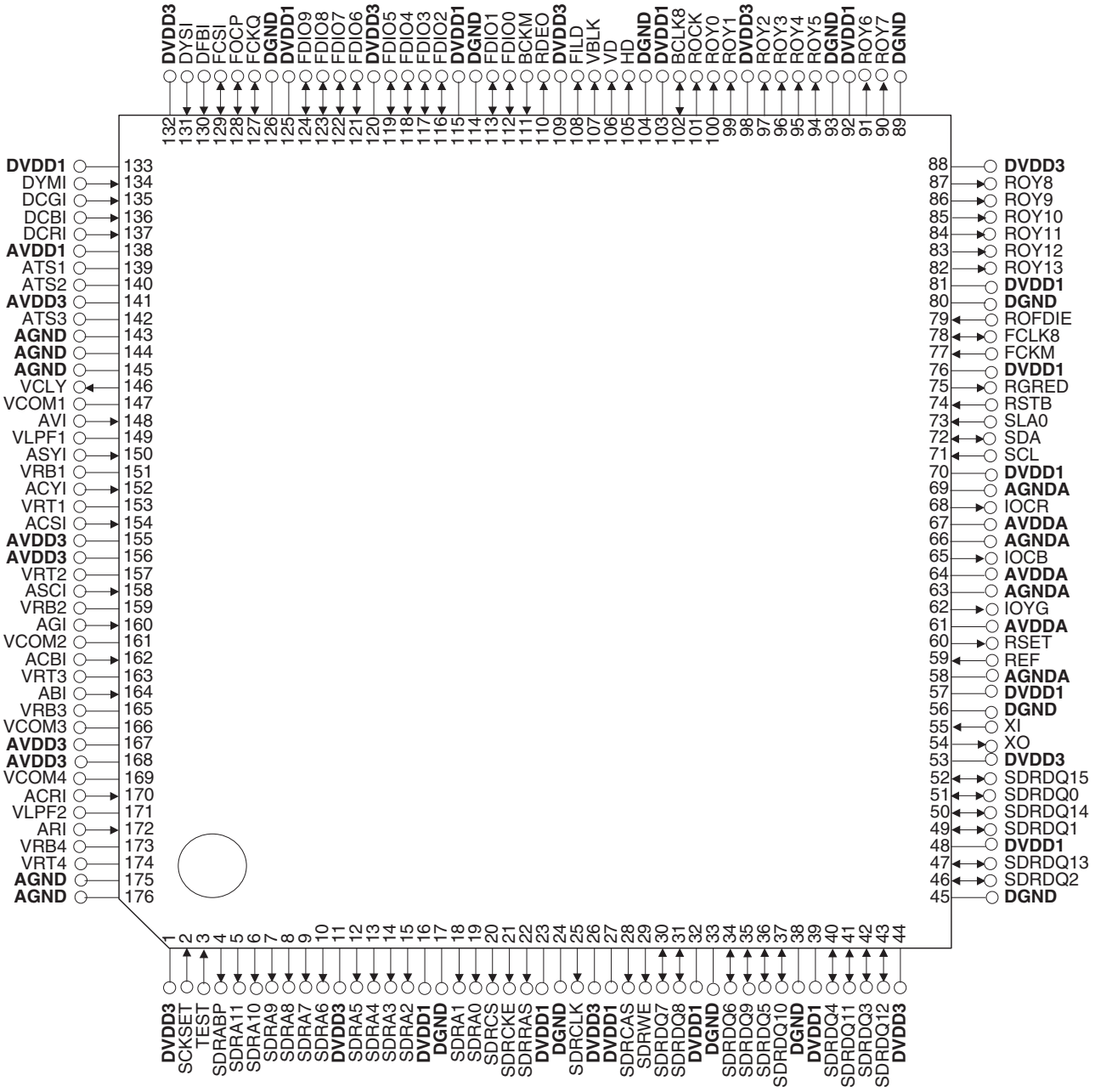
■UPD64015AGM-UEM (MAIN ASSY : IC5101)

• Video decoder (for main screen)

● Block Diagram



● **Pin Arrangement (Top View)**



● **Pin Function**

2.1 Power supply/ground terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVDD1	138	–	–	–	Analog 1.5V power supply Connect to the 1.5V power supply. Separate it from the other terminals via a filter.
AVDD3	141	–	–	–	Analog 3.3V power supply Connect to the 3.3V power supply. Separate it from the other terminals via a filter.
	155,156,167,168	–	–	–	Analog 3.3V power supply for ADC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AVDDA	61,64,67	–	–	–	Analog 3.3V power supply for DAC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AGND	143,144,145,175,176	–	–	–	Analog ground
AGNDA	58,63,66,69	–	–	–	Analog ground (for DAC)
DVDD1	16,23,27,32,39,48, 57,70,76,81,92,103, 115,125,133	–	–	–	Digital 1.5V power supply Connect to the 1.5V power supply.
DVDD3	1,11,26,44,53,88,98, 109,120,132	–	–	–	Digital 3.3V power supply Connect to the 3.3V power supply.
DGND	17,24,33,38,45,56, 80,89,93,104,114, 126	–	–	–	Digital ground

2.2 System reset terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RSTB	74	I	Schmitt	–	System reset input (Active-Low)

● **Pin Function**

2.3 I2C bus interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RGRED	75	O	LVTTL N-ch open drain	6 mA	I^2C register lead flag output (Active-Low)
SCL	71	I	LVTTL	Fail-safe	I^2C bus clock input Connect to the SCL line of the system.
SDA	72	I/O	LVTTL N-ch open drain	Fail-safe 6 mA	I^2C bus data input/output Connect to the SDA line of the system.
SLA0	73	I	LVTTL	–	I^2C bus slave address selection input (L : B8h/B9h, H : BAh/BBh) Connect to GND when set to low level and to DVDD3 (3.3V) when set to high level.

2.4 Terminal for test

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SCKSET	2	I	LVTTL	–	Test mode selection (L: normal, H: test mode)
TEST	3	I	LVTTL	–	Test setting (L: normal, H: test mode)
FCKM	77	I	LVTTL	–	FCLK8 test mode selection (L: normal, H: test mode)
BCKM	111	I	LVTTL	–	Test mode selection of BCLK8 terminal. (L: normal, H: test mode)
ATS1	139	I	Analog	–	Analog test input Connect to GND normally.
ATS2	140	I	Analog	–	Analog test input Connect to GND normally.
ATS3	142	I	Analog	–	Analog test input Connect to GND normally.
VLPF1	149	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.
VLPF2	171	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.

Caution: Connect these terminals for test to GND unless otherwise instructed.

● **Pin Function**

2.5 Clock generator terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
XI	55	I	Analog	–	Reference clock input Connect 24.576MHz crystal oscillator.
XO	54	O	Analog	–	Reference clock output Connect 24.576MHz crystal oscillator.
BCLK8	102	I/O	LVTTL 3-state	6 mA	Subsequent stage line lock clock monitor input/output It will become Hi-Z when BCK8OUT (SA1Fh, D5)=0. Normally, set to BCK8OUT=0 and leave it open.

2.6 Terminal for μPD64031A and μPD64032 digital connection

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FCLK8	78	I/O	LVTTL 3-state	6 mA	Front stage burst lock clock input/output It will become Hi-Z when FCK8S[2:0] (SA21h, D6-D4)=000b. Normally, set to FCK8S[2:0]=0 and leave it open.
FCKQ	127	I/O	LVTTL 3-state	3 mA	Sampling clock output for μPD64031A and μPD64032 digital connection. It will become Hi-Z when FCKQS[2:0] (SA21h, D2-D0)=000b. Normally, set to FCKQS[2:0]=0 and leave it open.
FOCP	128	I/O	LVTTL 3-state	3 mA	Clamp pulse output for μPD64031A and μPD64032 digital connection/timing output (VD) for digital RGB input. It will become Hi-Z when FOCPS[2:0] (SA23h, D2-D0)=000b. Normally, set to FOCPS[2:0]=0 and leave it open.

2.7 Terminal for RGB input

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
DFBI	130	I	LVTTL	–	Fast Blanking signal input for analog RGB input.
DYSI	131	I	LVTTL	–	YS signal input for digital RGB input.
DYMI	134	I	LVTTL	–	YM signal input for digital RGB input.
DCGI	135	I	LVTTL	–	Digital RGB/G signal input
DCBI	136	I	LVTTL	–	Digital RGB/B signal input
DCRI	137	I	LVTTL	–	Digital RGB/R signal input
FCSI	129	I/O	LVTTL 3-state	3 mA	Sync separation signal input/timing output (HD) for RGB input. It will become Hi-Z when FCSIS[2:0] (SA22h, D2-D0)=000b. Normally, set to FCSIS[2:0]=0 and leave it open.

● **Pin Function**

2.8 ADC1 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVI	148	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ASYI	150	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACYI	152	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACSI	154	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
VCLY	146	O	Analog	–	ADC1 clamp electric potential Connect to GND via 0.1μF and 10μF capacitors.
VCOM1	147	I	Analog	–	ADC1 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB1	151	I	Analog	–	ADC1 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT1	153	I	Analog	–	ADC1 top reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ADC2 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ASCI	158	I	Analog	–	ADC2 separate C signal input Input the image signal by cutting the capacity.
AGI	160	I	Analog	–	ADC2 RGB component G signal input Input the image signal by cutting the capacity.
VRT2	157	I	Analog	–	ADC2 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB2	159	I	Analog	–	ADC2 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM2	161	I	Analog	–	ADC2 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

● **Pin Function**

2.10 ACD3 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACBI	162	I	Analog	–	ADC3 color difference component Cb signal input Input the image signal by cutting the capacity.
ABI	164	I	Analog	–	ADC3 RGB component B signal input Input the image signal by cutting the capacity.
VRT3	163	I	Analog	–	ADC3 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB3	165	I	Analog	–	ADC3 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM3	166	I	Analog	–	ADC3 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ACD4 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACRI	170	I	Analog	–	ADC4 color difference component Cr signal input Input the image signal by cutting the capacity.
ARI	172	I	Analog	–	ADC3 RGB component R signal input Input the image signal by cutting the capacity.
VCOM4	169	I	Analog	–	ADC4 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB4	173	I	Analog	–	ADC4 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT4	174	I	Analog	–	ADC4 top reference voltage Connect to GND via a 0.1μF capacitor.

2.12 DAC section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
IO-YG	62	O	Analog	–	Color difference component Y/RGB component G output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CR	68	O	Analog	–	Color difference component Cr/RGB component R output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CB	65	O	Analog	–	Color difference component Cb/RGB component B output signal. Connect to AGNDA via a 200Ω load resistance.
REF	59	I	Analog	–	External reference input pin. Supply 1.0V. And, connect to AGNDA via a 0.1μF capacitor.
RSET	60	O	Analog	–	Connect to AGNDA via a 620Ω resistor for external adjustment.

● **Pin Function**

2.13 Digital image input/output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FDIO0-FDIO9	112,113,116, 117,118,119, 121,122,123, 124	I/O	LVTTL 3-state	6 mA	Digital 8/10 bit Cb, Cr output/input at the time of μPD64031A digital connection. It will become Hi-Z when FDIOS[2:0] (SA22h, D6-D4)=000b. Leave it open when not in use.
ROCK	101	O	LVTTL 3-state	6 mA	Clock for digital ITU-R BT.656/component output.
ROY0-ROY13	100,99,97,96, 95,94,91,90, 87,86,85,84, 83,82	O	LVTTL 3-state	6 mA	Digital ITU-R BT.656/component output. Digital RGB component (8 bit) output
ROFDIE	79	I	LVTTL	–	Image input/output terminal output enable. The state of ROY[13:0], ROCK, HD, VD, VBLK, FILD and RDEO terminals is controlled. L: Output terminal Hi-Z, H: Output enable Normally, pull up to 3.3V.

2.14 timing output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
HD	105	O	LVTTL 3-state	3 mA	Horizontal sync signal output
VD	106	O	LVTTL 3-state	3 mA	Vertical sync signal output
VBLK	107	O	LVTTL 3-state	3 mA	V blanking output
FILD	108	O	LVTTL 3-state	3 mA	Field output
RDEO	110	O	LVTTL 3-state	3 mA	Effective pixel range output

● **Pin Function**

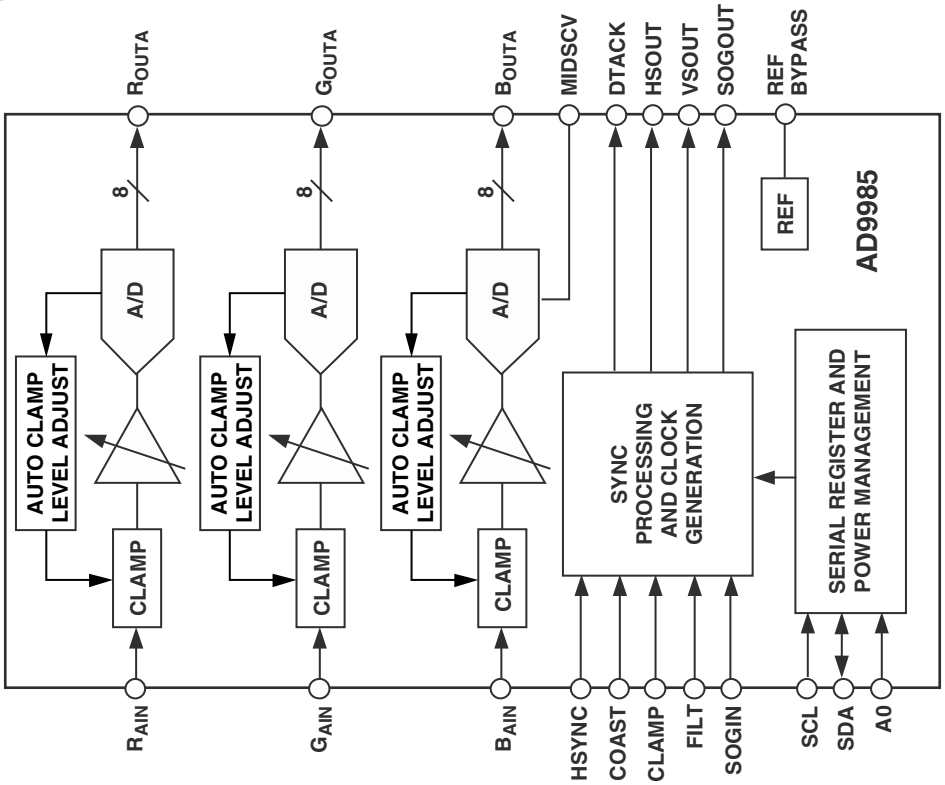
2.15 Memory interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SDRABP	4	O	LVTTL 3-state	3 mA	All bank pre-charge output for external memory (Active-High)
SDRCLK	25	O	LVTTL 3-state	9 mA	Clock output for external memory
SDRCKE	21	O	LVTTL 3-state	3 mA	Clock enable output for external memory (Active-High)
SDRCS	20	O	LVTTL 3-state	3 mA	Chip select output for external memory (Active-Low)
SDRCAS	28	O	LVTTL 3-state	3 mA	Column address strobe output for external memory (Active-Low)
SDRRAS	22	O	LVTTL 3-state	3 mA	Low address strobe output for external memory (Active-Low)
SDRWE	29	O	LVTTL 3-state	3 mA	Write enable output for external memory (Active-Low)
SDRA0 -SDRA11	19,18,15,14, 13,12,10,9,8, 7,6,5	O	LVTTL 3-state	3 mA	Address output for external memory Insert a damping resistor of approximately 100Ω, and connect to the SDRAM address terminal.
SDRDQ0 -SDRDQ15	51,49,46,42, 40,36,34,30, 31,35,37,41, 43,47,50,52	I/O	LVTTL 3-state	6 mA	Data input/output for external memory.

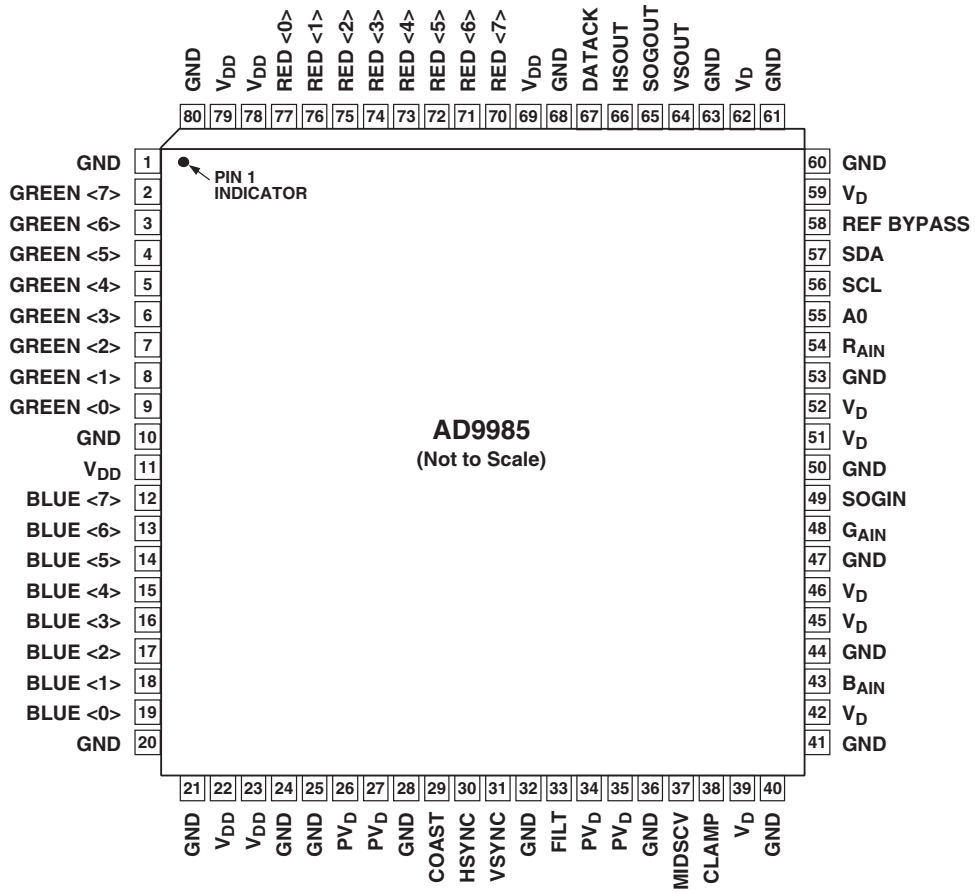
■ AD9985KSTZ-110-K (MAIN ASSY : IC5301)

• ADC

● Block Diagram



● Pin Arrangement (Top View)



● Pin Function

Pin Type	Mnemonic	Function	Value	Pin No.
Inputs	R_{AIN}	Analog Input for Converter R	0.0 V to 1.0V	54
	G_{AIN}	Analog Input for Converter G	0.0 V to 1.0V	48
	B_{AIN}	Analog Input for Converter B	0.0 V to 1.0V	43
	HSYNC	Horizontal SYNC Input	3.3 V CMOS	30
	VSYNC	Vertical SYNC Input	3.3 V CMOS	31
	SOGIN	Input for Sync-on-Green	0.0 V to 1.0 V	49
	CLAMP	Clamp Input (External CLAMP Signal)	3.3 V CMOS	38
	COAST	PLL COAST Signal Input	3.3 V CMOS	29
Outputs	Red [7:0]	Outputs of Converter Red, Bit 7 is the MSB	3.3 V CMOS	70–77
	Green [7:0]	Outputs of Converter Green, Bit 7 is the BSB	3.3 V CMOS	2–9
	Blue [7:0]	Outputs of Converter Blue, Bit 7 is the BSB	3.3 V CMOS	12–19
	DATACK	Data Output Clock	3.3 V CMOS	67
	HSOUT	HSYNC Output (Phase-Aligned with DATACK)	3.3 V CMOS	66
	VSOUT	VSYNC Output (Phase-Aligned with DATACK)	3.3 V CMOS	64
	SOGOUT	Sync-on-Green Slicer Output	3.3 V CMOS	65
References	REF BYPASS	Internal Reference Bypass	1.25 V	58
	MIDSCV	Internal Midscale Voltage Bypass		37
	FILT	Connection for External Filter Components for Internal PLL		33
Power Supply	V_D	Analog Power Supply	3.3 V	39, 42, 45, 46, 51, 52, 59, 62
	V_{DD}	Output Power Supply	3.3 V	11, 22, 23, 69, 78, 79
	PV_D	PLL Power Supply	3.3 V	26, 27, 34, 35
	GND	Ground	0 V	1, 10, 20, 21, 24, 25, 28, 32, 36, 40, 41, 44, 47, 50, 53, 60, 61, 63, 68, 80
Control	SDA	Serial Port Data I/O	3.3 V CMOS	57
	SCL	Serial Port Data Clock (100 kHz Maximum)	3.3 V CMOS	56
	A0	Serial Port Address Input 1	3.3 V CMOS	55

● Pin Function

Pin Name	Function
OUTPUTS	
HSOUT	Horizontal Sync Output A reconstructed and phase-aligned version of the Hsync input. Both the polarity and duration of this output can be programmed via serial bus registers. By maintaining alignment with DATACK and Data, data timing with respect to horizontal sync can always be determined.
VSOUT	Vertical Sync Output A reconstructed and phase-aligned version of the video Vsync. The polarity of this output can be controlled via a serial bus bit. The placement and duration in all modes is set by the graphics transmitter.
SOGOUT	Sync-On-Green Slicer Output This pin outputs either the signal from the Sync-on-Green slicer comparator or an unprocessed but delayed version of the Hsync input. See the Sync Processing Block Diagram to view how this pin is connected. (Note: Besides slicing off SOG, the output from this pin gets no other additional processing on the AD9985. Vsync separation is performed via the sync separator.)
SERIAL PORT (2-Wire)	
SDA	Serial Port Data I/O
SCL	Serial Port Data Clock
A0	Serial Port Address Input 1 For a full description of the 2-wire serial register and how it works, refer to the 2-wire serial control port section.
DATA OUTPUTS	
RED	Data Output, Red Channel
GREEN	Data Output, Green Channel
BLUE	Data Output, Blue Channel The main data outputs. Bit 7 is the MSB. The delay from pixel sampling time to output is fixed. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The DATACK and HSOUT outputs are also moved, so the timing relationship among the signals is maintained. For exact timing information.
DATA CLOCK OUTPUT	
DATACK	Data Output Clock The main clock output signal used to strobe the output data and HSOUT into external logic. It is produced by the internal clock generator and is synchronous with the internal pixel sampling clock. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The Data, DATACK, and HSOUT outputs are all moved, so the timing relationship among the signals is maintained.
INPUTS	
R_{AIN}	Analog Input for Red Channel
G_{AIN}	Analog Input for Green Channel
B_{AIN}	Analog Input for Blue Channel High impedance inputs that accept the Red, Green, and Blue channel graphics signals, respectively. (The three channels are identical, and can be used for any colors, but colors are assigned for convenient reference.) They accommodate input signals ranging from 0.5 V to 1.0 V full scale. Signals should be ac-coupled to these pins to support clamp operation.
HSYNC	Horizontal Sync Input This input receives a logic signal that establishes the horizontal timing reference and provides the frequency reference for pixel clock generation. The logic sense of this pin is controlled by serial Register 0EH Bit 6 (Hsync Polarity). Only the leading edge of Hsync is active; the trailing edge is ignored. When Hsync Polarity = 0, the falling edge of Hsync is used. When Hsync Polarity = 1, the rising edge is active. The input includes a Schmitt trigger for noise immunity, with a nominal input threshold of 1.5 V.
VSYNC	Vertical Sync Input The input for vertical sync.

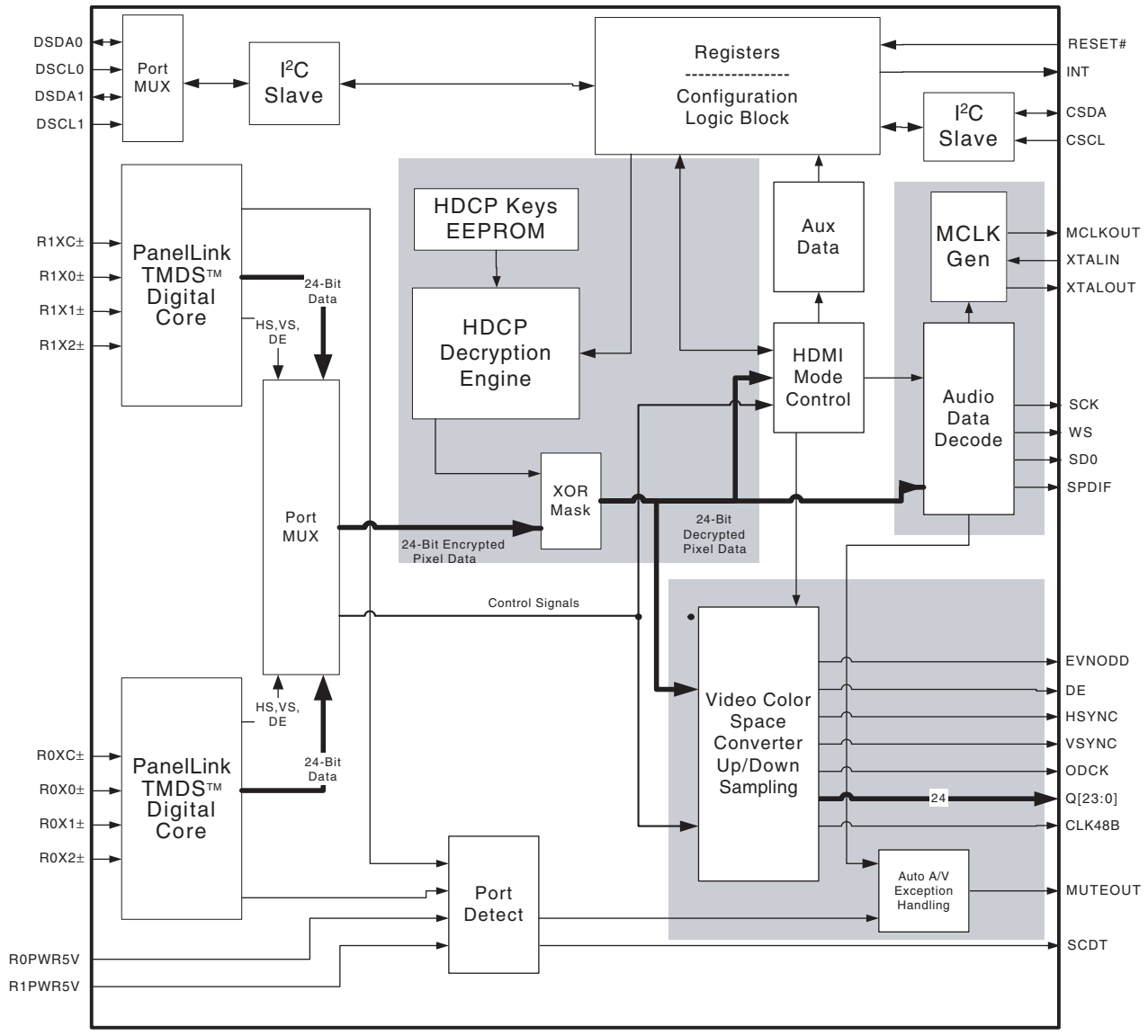
● **Pin Function**

Pin Name	Function
SOGIN	Sync-on-Green Input This input is provided to assist with processing signals with embedded sync, typically on the Green channel. The pin is connected to a high speed comparator with an internally generated threshold. The threshold level can be programmed in 10 mV steps to any voltage between 10 mV and 330 mV above the negative peak of the input signal. The default voltage threshold is 150 mV. When connected to an ac-coupled graphics signal with embedded sync, it will produce a noninverting digital output on SOGOUT. (This is usually a composite sync signal, containing both vertical and horizontal sync information that must be separated before passing the horizontal sync signal to Hsync.) When not used, this input should be left unconnected. For more details on this function and how it should be configured, refer to the Sync-on-Green section.
CLAMP	External Clamp Input This logic input may be used to define the time during which the input signal is clamped to ground. It should be exercised when the reference dc level is known to be present on the analog input channels, typically during the back porch of the graphics signal. The CLAMP pin is enabled by setting control bit Clamp Function to 1 (Register 0FH, Bit 7, default is 0). When disabled, this pin is ignored and the clamp timing is determined internally by counting a delay and duration from the trailing edge of the Hsync input. The logic sense of this pin is controlled by Clamp Polarity Register 0FH, Bit 6. When not used, this pin must be grounded and Clamp Function programmed to 0.
COAST	Clock Generator Coast Input (Optional) This input may be used to cause the pixel clock generator to stop synchronizing with Hsync and continue producing a clock at its current frequency and phase. This is useful when processing signals from sources that fail to produce horizontal sync pulses during the vertical interval. The COAST signal is generally not required for PC-generated signals. The logic sense of this pin is controlled by Coast Polarity (Register 0FH, Bit 3). When not used, this pin may be grounded and Coast Polarity programmed to 1, or tied HIGH (to V_D through a 10 k resistor) and Coast Polarity programmed to 0. Coast Polarity defaults to 1 at power-up.
REF BYPASS	Internal Reference BYPASS Bypass for the internal 1.25 V band gap reference. It should be connected to ground through a 0.1 μF capacitor. The absolute accuracy of this reference is ±4%, and the temperature coefficient is ±50 ppm, which is adequate for most AD9985 applications. If higher accuracy is required, an external reference may be employed instead.
MIDSCV	Midscale Voltage Reference BYPASS Bypass for the internal midscale voltage reference. It should be connected to ground through a 0.1 μF capacitor. The exact voltage varies with the gain setting of the Blue channel.
FILT	External Filter Connection For proper operation, the pixel clock generator PLL requires an external filter. Connect the filter shown in Figure to this pin. For optimal performance, minimize noise and parasitics on this node.
POWER SUPPLY	
V_D	Main Power Supply These pins supply power to the main elements of the circuit. They should be filtered and as quiet as possible.
V_{DD}	Digital Output Power Supply A large number of output pins (up to 25) switching at high speed (up to 110 MHz) generates a lot of power supply transients (noise). These supply pins are identified separately from the V_D pins so special care can be taken to minimize output noise transferred into the sensitive analog circuitry. If the AD9985 is interfacing with lower voltage logic, V_{DD} may be connected to a lower supply voltage (as low as 2.5 V) for compatibility.
PV_D	Clock Generator Power Supply The most sensitive portion of the AD9985 is the clock generation circuitry. These pins provide power to the clock PLL and help the user design for optimal performance. The designer should provide quiet, noise-free power to these pins.
GND	Ground The ground return for all circuitry on-chip. It is recommended that the AD9985 be assembled on a single solid ground plane, with careful attention given to ground current paths.

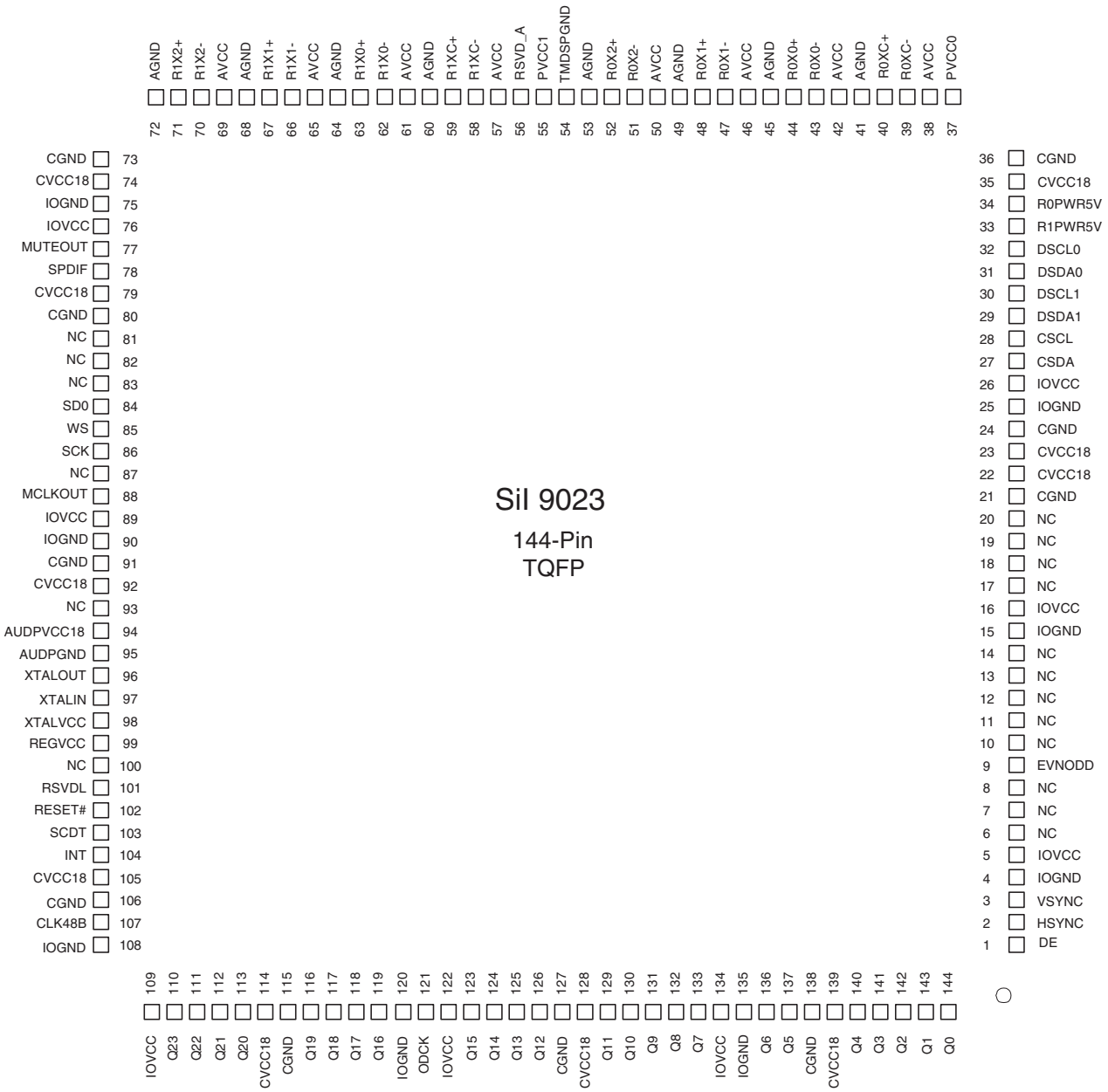
■ Sil9023CTU (MAIN ASSY : IC5401)

• **HDMI Rx**

● Block Diagram



● Pin Arrangement (Top View)



● **Pin Function**

Digital Video Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
Q0	144	8 mA	LVTTL	Output	24-bit Output Pixel Data Bus.
Q1	143		LVTTL	Output	
Q2	142		LVTTL	Output	
Q3	141		LVTTL	Output	
Q4	140		LVTTL	Output	
Q5	137		LVTTL	Output	
Q6	136		LVTTL	Output	
Q7	133		LVTTL	Output	
Q8	132		LVTTL	Output	
Q9	131		LVTTL	Output	
Q10	130		LVTTL	Output	
Q11	129		LVTTL	Output	
Q12	126		LVTTL	Output	
Q13	125		LVTTL	Output	
Q14	124		LVTTL	Output	
Q15	123		LVTTL	Output	
Q16	119		LVTTL	Output	
Q17	118		LVTTL	Output	
Q18	117		LVTTL	Output	
Q19	116		LVTTL	Output	
Q20	113		LVTTL	Output	
Q21	112		LVTTL	Output	
Q22	111		LVTTL	Output	
Q23	110		LVTTL	Output	
DE	1		LVTTL	Output	Data enable.
HSYNC	2		LVTTL	Output	Horizontal Sync Output control signal.
VSYNC	3		LVTTL	Output	Vertical Sync Output control signal.
ODCK	121	12 mA	LVTTL	Output	Output Data Clock.

● Pin Function

Digital Audio Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
XTALIN	97	—	LVTTL	In	Crystal Clock Input.
XTALOUT	96	—	LVTTL	Out	Crystal Clock Output.
MCLKOUT	88	8 mA	LVTTL	Out	Audio Master Clock Output.
SCK	86	4 mA	LVTTL	Out	I^2S Serial Clock Output.
WS	85	4 mA	LVTTL	Out	I^2S Word Select Output.
SD0	84	4 mA	LVTTL	Out	I^2S Serial Data Output.
SPDIF	78	4 mA	LVTTL	Out	S/PDIF Audio Output.
MUTEOUT	77	4 mA	LVTTL	Out	Mute Audio Output.

Configuration/Programming Pins

Pin Name	Pin #	Strength	Type	Dir	Description
INT	104	4 mA	LVTTL[1]	Out	Interrupt Output
RESET#	102	—	Schmitt	In	Reset Pin. Active LOW. 5V Tolerant.
DSCL0	32	—	Schmitt	In	DDC I^2C Clock for Port 0. 5V Tolerant.
DSDA0	31	4 mA	Schmitt	Bi-Di	DDC I^2C Data for Port 0. 5V Tolerant.
DSCL1	30	—	Schmitt	In	DDC I^2C Clock for Port 1. 5V Tolerant.
DSDA1	29	4 mA	Schmitt	Bi-Di	DDC I^2C Data for Port 1. 5V Tolerant.
CSCL	28	—	Schmitt	In	Configuration I^2C Clock. 5V Tolerant.
CSDA	27	4 mA	Schmitt	Bi-Di	Configuration I^2C Data. 5V Tolerant.
SCDT	103	12 mA	LVTTL	Out	Indicates active video at HDMI input port.
CLK48B	107	12 mA	LVTTL	Bi-Di	Data Bus Latch Enable. [2]
R0PWR5V	34	—	Schmitt	In	Port 0 Transmitter Detect. 5V Tolerant.
R1PWR5V	33	—	Schmitt	In	Port 1 Transmitter Detect. 5V Tolerant.
RSVDL	101	—	LVTTL	In	Reserved, must be tied LOW.
RSVD_A	56	—	—	—	Reserved Pin, leave unconnected.
NC	6,7,8,10,11,12,13,14,17,18,19,20,81,82,83,87,93,100	—	—	—	No internal connection.
EVNODD	9	8 mA	LVTTL	Out	Indicates Even or Odd field for interlaced formats. Polarity programmable in register.

Notes:
1. The INT pin is programmable as either a push-pull LVTTL output, or as an open-drain output.
2. CLK48B is used to clock external 24-to-48 bit latches. CLK48B is also latched on the rising edge of RESET# to set the I2C device addresses for CSCL/CSDA. Refer to Table 10. CLK48B has a weak internal pull-down, and so will be latched as a LOW if not otherwise connected.

● **Pin Function**

Differential Signal Data Pins

Pin Name	Pin #	Type	Description	
R0XC+	40	Analog	TMDS input clock pair.	HDMI Port 0
R0XC-	39	Analog		
R0X0+	44	Analog	TMDS input data pair.	
R0X0-	43	Analog		
R0X1+	48	Analog	TMDS input data pair.	
R0X1-	47	Analog		
R0X2+	52	Analog	TMDS input data pair.	
R0X2-	51	Analog		
R1XC+	59	Analog	TMDS input clock pair.	HDMI Port 1
R1XC-	58	Analog		
R1X0+	63	Analog	TMDS input data pair.	
R1X0-	62	Analog		
R1X1+	67	Analog	TMDS input data pair.	
R1X1-	66	Analog		
R1X2+	71	Analog	TMDS input data pair.	
R1X2-	70	Analog		

Power and Ground Pins

Pin Name	Pin #	Type	Description	Supply
CVCC18	22, 23, 35, 74, 79, 92, 105, 114, 128, 139	Power	Digital Logic VCC	1.8V
CGND	21, 24, 36, 73, 80, 91, 106, 115, 127, 138	Ground	Digital Logic GND	
IOVCC	5, 16, 26, 76, 89, 109, 122, 134	Power	Input/Output Pin VCC	3.3V
IOGND	4, 15, 25, 75, 90, 108, 120, 135	Ground	Input/Output Pin GND	
AVCC	38, 42, 46, 50, 57, 61, 65, 69	Power	TMDS Analog VCC	3.3V
AGND	41, 45, 49, 53, 60, 64, 68, 72	Ground	TMDS Analog GND	
PVCC0	37	Power	TMDS Port 0 PLL VCC	3.3V
PVCC1	55	Power	TMDS Port 1 PLL VCC	3.3V
TMDSPGND	54	Ground	TMDS PLL GND	
AUDPVCC18	94	Power	ACR PLL VCC	1.8V
AUDPGND	95	Ground	ACR PLL GND	
XTALVCC	98	Power	ACR PLL Crystal Input VCC	3.3V
REGVCC	99	Power	ACR PLL Regulator VCC	3.3V